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TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
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TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, *Secretary*

OFFICE OF TECHNICAL SERVICES

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CONTENTS

	Page
HOW TO ORDER TRANSLATIONS	iii
AGRICULTURE	1071
Animal Husbandry	1071
Plant Cultivation	1071
ASTRONOMY	1073
Astrophysics	1073
BEHAVIORAL SCIENCES	1075
BIOLOGICAL SCIENCES	1075
Anatomy and Physiology	1076
Biochemistry	1077
Botany	1078
Medical Specialties and Equipment	1080
Neurology and Psychiatry	1080
Pathology	1080
Pharmacology and Toxicology	1082
Radiology	1085
Zoology	1085
CHEMISTRY	1087
Analytical Chemistry	1088
Inorganic Chemistry	1091
Organic Chemistry	1093
Physical Chemistry	1098
EARTH SCIENCES	1106
Climatology and Meteorology	1107
Geodesy	1108
Geography	1108
Geology	1109
Mineralogy	1111
Oceanography	1112
Physics of the Atmosphere	1113
Seismology	1114
ENGINEERING	1114
Aeronautical Engineering	1115
Chemical Engineering	1115
Civil Engineering	1121
Electrical and Electronic Engineering	1123
Mechanical Engineering	1128
Ordnance, Missiles, and Satellite Vehicles	1129
Sanitation and Safety Engineering	1130
FOOD, HANDLING, AND PACKAGING EQUIPMENT	1130
MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT	1131
Engines and Propulsion Systems	1132
Machine Parts and Mechanisms	1134
Manufacturing Equipment and Processes	1135
Transport, Traction and Hoist Facilities	1138
MATERIALS	1139
Ceramics and Refractories	1141
Fuels, Lubricants, and Hydraulic Fluids	1142
Leather and Textiles	1144
Paints and Finishes	1145
Photographic Materials	1146
Plastics	1146
Rubber and Elastomers	1148
Wood and Paper	1148
MATHEMATICS	1150
Computing Devices	1151
MECHANICS	1151
Aerodynamics and Pneumatics	1153
Hydrodynamics, Hydraulics, and Hydrostatics	1153
Statics, Kinematics, and Kinetics	1153
METALLURGY	1154
Ferrous Metals	1159
Light Metals	1162
Structural Metallurgy and Corrosion	1162

	Page
NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY	1163
Instrumentation and Installations	1166
Nuclear Engineering and Power	1166
PERSONNEL SUPPLIES AND PERSONAL EQUIPMENT	1167
PHYSICS	1167
Acoustics	1167
Electricity and Magnetism	1168
Electronics	1170
Molecular Physics and Spectroscopy	1171
Optics	1172
Solid State Physics	1172
Theoretical Physics	1179
Thermodynamics	1179
Wave Propagation	1181
RESEARCH METHODS, TECHNIQUES AND EQUIPMENT	1182
Communication Theory	1183
SOCIAL SCIENCES	1183
BOOK REVIEWS	A-21
TRANSLATIONS IN PROCESS	B-27
PERIODICALS TRANSLATED COVER-TO-COVER	C-29
AUTHOR INDEX	I-1
SUBJECT INDEX	I-5
JOURNAL INDEX	I-15
NUMBER INDEX	I-21

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TECHNICAL TRANSLATIONS

Volume 9, Number 11 Pages 1071 - 1183 June 15, 1963

*Descriptors marked with an asterik are listed in the subject index.

AGRICULTURE

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 59. 27 Mar 63 [26]p. JPRS: 18384.
Order from OTS $0.75 63-21433

Trans. of Traktory i Sel'khozmashiny (USSR) 1963 [v. 32] no. 1, p. 1-4, 29-30, 32, 34-35 (some excerpts); and from Sel'skaya Zhizn' (USSR) 1963, 7 Feb, p. 1; Pravda Vostoka (USSR) 1963, 12 Jan, p. 1.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, Cargo vehicles, Cotton, Beets, *Drills, Cereals, Grasses, Trailers, *Excavators.

Contents:
New long-distance cotton hauling transport vehicles, by V. Shabert
Acceleration of machine building for full mechanization of beet cultivation and harvesting
Tractor and agricultural machine building in 1963, by I. N. Es'kov
T-120 truck-tractor, by A. Pdokovyrin
SZP-47 press-type grain-grass drill, by Ya. Z. Novichenko and E. V. Kossov
PSTM-2.0 orchard tractor semi-trailer, by B. I. Otdel'nov
TKU-0.9 universal trench digger, by V. F. Kireev.

Nakonechnyi [I. I.].
WIRKSAMKEIT DER STUFENLOSEN REGELUNG DER FAHRGESCHWINDIGKEIT EINS SELBSTFAHRENDEN MÄHDRESCHERS (Efficiency of the Stepless Speed Regulation of a Self-Propelled Combine). 6p.
Order from TIB $1.55

Trans. in German of Traktory i Sel'khozmashiny (USSR) 1961, v. 31, no. 1, p. 24-28.

DESCRIPTORS: Control, Velocity, *Speed regulators, *Machines, *Agriculture.

THE DEVELOPMENT OF RESEARCH ON AGRICULTURAL SUBJECTS. 25 Mar 63 [9]p. JPRS: 18349.
Order from OTS $0.50 63-21419

Trans. of Akademiya Nauk SSSR. Vestnik, 1962 [v. 32] no. 12, p. 92-95.

DESCRIPTORS: Scientific research, *Agriculture, Scientific organizations

Animal Husbandry

Karabaev, D. K.
THE DEVELOPMENT OF VETERINARY SCIENCE IN KAZAKHSTAN. 7 May 62 [22]p. JPRS: 13657.
Order from OTS or SLA $2.60 62-24394

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki [Alma Ata] (USSR) 1961 [v. 4] no. 6 [p. 44-52].

DESCRIPTORS: Veterinary medicine, Scientific research, Scientific personnel

Popova, V. M.
VETERINARY PHYSICIAN AND DEPUTY OF THE SUPREME SOVIET OF THE USSR; VALENTINA KIRILLOVNA EFREMOVA (Veterinarnyi Vrach - Deputat Verkhovnogo Soveta SSSR). 27 Nov 62, 9p. Trans. V-1807.
Order from OTS or SLA $1.10 63-13232

Trans. of Veterinariya (USSR) 1962, v. 39, no. 6, p. 10-12.

DESCRIPTORS: *Veterinary medicine, Scientific personnel.

Plant Cultivation

AGRICULTURAL SCIENCES: [SELECTED] TRANSLATIONS. 3 Apr 63 [52]p. 30 refs. JPRS: 18528.
Order from OTS $1.50 63-21495

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1962 [v. 7] no. 12, p. 7-17 and 19-24.

DESCRIPTORS: *Wheat, *Pollen, *Genetics, *Corn, Distribution, Geography, *Agriculture

Contents:
World resources of early spring wheat as an initial material for selection, by M. M. Yakubtsiner
The influence of foreign pollen on depressing self-pollination and characteristics of corn hybrids, by Z. Lebedeva

Antipov-Karataev, I. N. and Filippova, V. N.
CONCERNING THE RATE OF THE LEVELLING OF THE COMPOSITION OF EXCHANGEABLE CATIONS AFTER THE MIXING OF DIFFERENT SOIL HORIZONS (ON THE THEORY AND PRACTICE OF THE ORGANIZATION OF A THICK ARABLE SOIL LAYER). [1962] 15p. 9 refs.
Order from OTS or SLA $1.60 63-10065

Trans. of Pochvovedenie (USSR) 1939, no. 2, p. 42-50.

DESCRIPTORS: *Soils, *Ion exchange, Soil mechanics, Chemical analysis.

Bulynko, M. G.
DIE VERFORMUNG VON TORFSTREU BEIM PRESSEN. (Deformation of Peat Litter During Pressing). 6p.
Order from TIB $1.30

Trans. in German of #Fizika Tverdogo Tela (USSR) 1960 [v. 2] no. 2, p. 171-174.

DESCRIPTORS: *Deformation, Grasses, *Peat, Pressure.

Chastukhin, V. Ya.
DECAY OF VEGETATION LITTER AND THE ROLE OF FUNGI IN SOIL FORMATION, tr. by [A. L. Monks]. [1962] 19p. 3 refs.
Order from OTS or SLA $1.60 AEC-tr-5237

Trans. of Agrobiologiya (USSR) 1952, no. 4, p. 12-25.

DESCRIPTORS: *Soils, *Fungi, Decomposition, *Organic materials, Ecology, Biology, *Bacteria, *Plants, Microorganisms.

Fridman, S. D. and Klevke, V. A.
UREA-FORMALDEHYDE FERTILIZERS. [1962] 15p. 26 refs.
Order from OTS or SLA $1.60 62-20410

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1961, v. 34 [no. 10] p. 2206-2216.

DESCRIPTORS: *Fertilizers, *Urea, *Formaldehyde, Production, Condensation reactions.

Investigations were carried out on urea condensation with formaldehyde in acid medium with the goal of application of the condensation products as fertilizers containing slowly assimiable nitrogen. Methods of analysis of these compounds were developed. The effects on composition and yield of the condensation products were investigated for the following factors: pH values of medium; molar ratio of urea-formaldehyde, temperature, reaction time; nature of the acid catalyst. As result of the investigations in correspondance with agrochemical testings a reaction course was proposed, permitting production of the condensation products, capable to serve as sources of slow-assimilable nitrogen. A technological scheme for production of the urea-formaldehyde fertilizers was developed. (Author)

Guseinov, D. M.
EIN STIMULIERENDES MITTEL AUS ERDÖL ZUR ERHÖHUNG DER ERGIEBIGKEIT VON PFLANZEN. (A stimulating means containing mineral oil to increase the fertility in agriculture). 5p.
Order from TIB $1.20

Trans. in German of Akademiya Nauk SSSR. Doklady, 1958, v. 119, no. 5 [p. 1032-1034].

DESCRIPTORS: *Stimulation, *Mineral oils, Fertility, Plants

Kurchatov, P. A.
CONTRIBUTION TO THE STUDY OF MINERAL PHOSPHATES. [1962] 18p. 13 refs.
Order from OTS or SLA $1.60 63-10063

Trans. of Udobrenie i Urozhai (USSR) 1931, v. 3, no. 11/12, p. 1058-1067.

DESCRIPTORS: *Phosphates, *Minerals, *Soils, Acids, Solubility, Aluminum compounds, Iron compounds, Chemical analysis, Absorption, *Fertilizers.

Paribok, T. A., and Shkol'nik, M. Ya.
EFFECT OF SOIL TEMPERATURE ON THE CONTENT OF DIFFERENT FORMS OF BORON IN BEAN PLANTS (PHASEOLUS VULGARIS L.) (Vliyanie Temperatury Pochvy na Soderzhanie Razlichnykh Form Bora v Rasteniyakh Fasoli) tr. by Lydia Venters. Oct 62, 15p. 26 refs.
Order from OTS or SLA $1.60 AEC-tr-5488

Trans. of Akademiya Nauk SSSR. Botanicheskii Institut. Trudy. [Seriya] p. IV: Eksperimental'naya Botanika 1962, no. 15, p. 193ff.

DESCRIPTORS: *Soils, Temperature, *Boron, *Plants, *Vegetables, Chemical analysis, Solubility, Absorption.

The bean plants were observed to absorb more boron at high (26, 28 and 30°) than at low (12°, 15° and 18°C) soil temperature. The effect of the soil temperature on the boron content of leaves was particularily conspicious, while the effect on the boron content of roots and stems was insignificant if any. At high soil temperatures the total content of boron increased at the expense of the soluble form. With increasing temperature of content of soluble boron (in per cent of the total) and the value of the ratio soluble boron/insoluble boron increased. No substantial differences in the content of soluble boron between some monocotyledonous (wheat, barley) and dicotyledonous (bean plants, clover) plants were observed. Considerations are expressed that the content of soluble boron does not adequately characterize the presence of the active boron in plants. (Author)

Rubin, B. A., and Khandobina, L. M.
THE ACTION OF SODIUM FLUORIDE ON THE RESPIRATION OF HEALTHY CARROTS AND THOSE ATTACHED BY PHOMA ROSTRUPII [Deistvie Ftoristogo Natriya na Dykhaniya Zdorovoi i Porazhennoi Fomozom Morkovi]. [1962] [9]p. 11 refs.
Order from OTS or SLA $1.10 63-13581

Trans. of Akad[emiya] Nauk SSSR. Doklady [1957] v. 116, no. 2, p. 277-279.

DESCRIPTORS: *Plants, Diseases, *Sodium compounds, *Fluorides, *Respiration, *Carrots, *Fungi, Oxidases, Metabolism, *Fungicides.

Shevchenko, F. P., and Alinovskii, P. G.
DISEASES OF FODDER BEANS IN WESTERN SIBERIA (Bolezni Kormovykh Bobov v Zapadnoi Sibiri) 17 Dec 62, 11p. (figs. omitted). Trans. A-1382.
Order from OTS or SLA $1.60 63-13592

Trans. of Zashchita Rastenii ot Vreditelei i Boleznei (USSR) 1962, v. 7, no. 9, p. 20-23.

DESCRIPTORS: Diseases, *Plants, *Siberia, *Fungus infections, *Virus infections, Decontamination, *Seeds, Viricides, Fungicides, Metalorganic compounds, Mercury.

Tumanov, I. I., Isakov, N. A., and Khvalin, N. N.
FIELD INSTALLATION FOR ESTIMATING THE FROST RESISTANCE OF PLANTS (Polevaya Ustanovka dlya Opredeleniya Morozostoikosti Rastenii). 10 Oct 62, 8p. Trans. A-1368.
Order from OTS or SLA $1.10 63-13025

Trans. of Akademiya Nauk [SSSR]. Vestnik, 1962, v. 32, no. 7, p. 69-72.

DESCRIPTORS: *Freezing, *Plants (Botany), Resistance, *Laboratory equipment.

Volfkovich, S. I.
PHYSICO-CHEMICAL ANALYSIS AND TECHNOLOGY OF MINERAL FERTILIZERS. [1962] 15p. 13 refs.
Order from OTS or SLA $1.60 62-20409

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1961, v. 34, no. 10, p. 2133-2146.

DESCRIPTORS: Analysis, Physical chemistry, *Minerals, *Fertilizers.

Vyalov, S. S. and Tsytovich, N. A.
EVALUATION OF THE BEARING CAPACITY OF COHESIVE SOILS BY THE BALL INDENTATION TEST. [1962] 5p. 10 refs.
Order from OTS or SLA $1.10 62-20390

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1956, v. 111, no. 6, p. 1193-1196.

DESCRIPTORS: *Soil mechanics, *Soils, Test methods, Analysis.

ASTRONOMY

TRANSACTIONS OF THE CONFERENCE ON PROBLEMS OF COSMOGONY (NO. 5): SELECTED PARTS. [1962] [73]p. 50 refs. ACIC RR-48 (Cont.).
Order from OTS or SLA $7.60 63-13559

Trans. of mono. Trudy Pyatogo Soveshchaniya po Voprosam Kosmogonii [AN SSSR] n.d., p. 106-112, 118-137, 356-388.

DESCRIPTORS: *Conferences, *Solar systems, Galaxies, *Extraterrestrial radio waves, Polarization, Radiometers, Frequency modulation, Radio interference, Radio astronomy, Measurement.

Contents:
Measuring the intensity of the radio emission from cosmic sources, by A. D. Kuz'min
A polarization radiometer for the wavelength $\lambda = 3.2$ cm. and its use, by N. L. Kaidanovskii and others
An installation with a modulation-interference system for receiving radio emission from cosmic sources, by Yu. I. Alekseev
The problem of choosing the modulation frequency in a modulation radiometer, by A. E. Salomonovich and T. A. Shmaonov
A radiotelescope output device with a time constant of several hours, by S. E. Khaikin and others
Radio methods for studying meteors, by V. V. Fedynskii.

Polonnikov, R. I.
A PHOTOSERVOSYSTEM. 25 Jan 63, 6p. FTD-TT-62-1528.
Order from OTS or SLA $1.10 63-15540

Unedited rough draft trans. of Soviet patent 140226 (683412/26) 25 Oct 60.

DESCRIPTORS: *Telescopes, *Photoelectric cells, *Servomechanisms, Optical equipment, Feedback.

A photoservosystem for training telescopes, which differs in that, for the purpose of increasing the training precision and simplifying the design, there is located in the focal plane of the telescope an analyzing pyramid, which directs the luminous flux from the star to four photoelements connected in pairs, which are supplied by atomic batteries; for periodic correction of the entire system an opaque gate with a radioluminescent standard, a gate which blocks out the luminous flux, is installed and a feedback circuit is introduced. (Author)

Astrophysics

NEWS OF THE COMMISION ON PLANETARY PHYSICS, 1960, VOL. 2: SELECTED ARTICLES. 13 Dec 62, 21p. (figs. omitted) 14 refs. FTD-TT-62-1514.
Order from OTS or SLA $2.60 63-15568

Unedited rough draft trans. of [Akademiya Nauk SSSR]. Komissiya po Fizike Planet. Izvestiya, 1960, v. 2, p. 46-54, 65-72.

DESCRIPTORS: *Moon, Surface properties, Temperature, Determination, *Temperature sensitive elements, Filters (Electromagnetic wave), *Albedo (Astronomy), Extraterrestrial topography

Contents:
Practice of determining the temperature of individual parts of lunar surface, by Yu. N. Chistyakov
Indicatrices of reflection of individual sections of the lunar surface, by N. P. Barabashov and V. I. Yezerskii.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 56. 1 Apr 63, 54p. JPRS: 18467.
Order from OTS $16.00/year 61-11147-56
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, USSR, *Astrophysics, *Meteorology, *Oceanology.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

Alekseev, V. M.
ESTIMATING PERTURBATIONS OF HYPERBOLIC MOTION IN THE THREE-BODY PROBLEM. [1962] [24]p. 8 refs.
Order from OTS or SLA $2.60 63-10331

Trans. of #Astron[omicheskii] Zhurnal (USSR) [1961] v. 38, no. 6, p. 1099-1113.

DESCRIPTORS: *Perturbation theory, *Motion, *N-body problem, Equations, Inequalities, Celestial mechanics.

In pursuing his predictable and almost inexorable direction of research in celestial mechanics, V. M. Alekseev has produced a set of "sharpened" estimates on perturbations of hyperbolic sub-motion in the 3-body problem. The application in mind is that of lunar approach. (Author)

Biermann, L., Lüst, R. and others.
STUDY OF THE INTERPLANETARY MEDIA BY MEANS OF THE ARTIFICIAL IONIZED CLOUDS (Zur Untersuchung des Interplanetaren Mediums mit Hilfe Künstlich Eingebrachter Ionenwolken). [1962] [15]p. 18 refs.
Order from SLA $1.60 62-20168

Trans. of Zeitschrift für Astrophysik (Germany) 1961, v. 53, no. 4, p. 226-236.

DESCRIPTORS: *Interstellar matter, *Ionization, *Clouds, Carbon compounds, Monoxides, Calcium, Barium, Strontium, Interference, Thermal diffusion, Solar spectrum, Solar radiation, Photographic plates, *Space probes.

The minimum mass necessary for producing an ionized cloud which can be detected and photographed for a sufficiently long time against the night sky has been calculated. It is 2.1×10^3g for Ca, 6.0×10^3g for Sr, 0.13×10^3g for Ba, and 2.6×10^9g for CO, assuming that the distance of the cloud from earth is 30 earth radii, the observing instrument has an angular resolution of 20"; accelerations of 10 cm/sec^2 should be measurable with an error of $\pm$ 10%, for CO, the time for ionization by charge exchange is 3×10^5 sec, assuming a flux of the solar corpuscular radiation of 10^9 protons/cm^2 sec. The minimum mass for CO could be reduced by 4 orders of magnitude if it is ejected during strong solar activity since then the flux of the corpuscular radiation is higher by 2 orders of magnitude. The thermal diffusion of the ejected particles (with a thermal velocity corresponding to a temperature of 2000° K) is hindered perpendicular to an interplanetary magnetic field of 10^{-5} gauss after the particles are ionized. The above minimum masses could be considerably lowered by using spectral filters which could strongly reduce the brightness of the night sky.

Dravskikh, A. F.
SPECTRA OF SOLAR RADIO BURSTS, tr. by P. A. Kasakov. [1952] 5p. 6 refs. [CSIRO Trans] 5906.
Order from OTS or SLA $1.10 62-32357

Trans. of Solnechnye Dannye (USSR) 1961, no. 1, p. 61-65.

DESCRIPTORS: *Solar spectrum, Sunspots, *Solar flares, *Extraterrestrial radio waves, Solar disturbances, Astrophysics, Radio astronomy.

Fednyskii, V. V., Levin, B. Yu., and Nemirova, E. K.
RADAR METHODS OF METEOR OBSERVATION: REVIEW OF A BOOK BY E. I. FYALKO. AID Work Assignment no. 35, Task 6a. 23 Jan 63 [4]p. AID rept. S-63-17.
Order from OTS or SLA $1.10 63-15342

Review of mono. Radiolokatsionnye Metody Nablyudeniya Meteorov, Moscow, 1961, 111p. Trans. of mono. available from OTS or SLA $8.60 as 62-32504, 9 Aug 62 [92]p.

DESCRIPTORS: *Meteors, Radio astronomy, Radar, *Radar analysis, *Meteorological radar, Meteorological data.

This is a review of Soviet and non-Soviet information on radar methods of meteor observation and investigation. The following topics are discussed: the use of radio astronomy for the observation of meteors, certain problems in radiophysics and geophysics, and the radio-engineering aspects of radar methods of meteor observation.

Kosachevskii, M. P.
THE ESTIMATION OF THE RELATIVE DISTURBANCES OF THE SATELLITES OF MARS [Otsenka Vzaimnykh Vozmushchenii Sputnikov Marsa]. [1962] [14]p. 7 refs.
Order from OTS or SLA $1.60 62-20400

Trans. of Moscow U. Vestnik. [Seriya Matematiki, Mekhaniki, Astronomii, Fiziki, Khimii] (USSR) 1958 [v. 13] no. 4, p. 57-[64].

DESCRIPTORS: *Mars, *Satellites, Solar systems, *Solar disturbances, Density, Numerical analysis, Planets, *Celestial mechanics.

The present paper contains an investigation on the motion theory of Mars satellites. Under the assumption that Mars satellites are homogeneous spheres with the diameters 15 and 8 km and with the density 3,96, with the aid of the theory developed for the Saturn satellites, formulas are obtained for the estimation of the deviations of the Mars satellites caused by mutual influence. The influence of the sun is 100-1000 times smaller than the mutual influence of the satellites is asserted.

Sosnova, A. K.
AN EXPERIMENT IN USING THE ELECTRONIC COMPUTER "STRELA" FOR PROCESSING MEASUREMENTS OF METEORIC PHOTOGRAPHS.
23 Jan 63 [13]p. MCL-1201.
Order from OTS or SLA $1.60 63-15543

Unedited rough draft trans. of Akademiya Nauk SSSR. Komissiya po Kometam i Meteoram. Byulleten', 1959, no. 4, p. 35-41.

DESCRIPTORS: *Computers, Scheduling, Numerical methods and procedures, *Meteors, Photographic analysis, Measurement, Data processing systems, *Photographs.

BEHAVIORAL SCIENCES

YURII BORISOVICH KOBZAREV AND HIS WORK: BIOGRAPHY AND ANNOTATED BIBLIOGRAPHY. Rept. on Work Assignment no. 37. 6 Mar 63 [3]p. 7 refs.
AID rept. S-63-30.
Order from OTS or SLA $1.10 63-15942

DESCRIPTORS: History, *Bibliography, Scientific personnel, *Physicists, *Biographies.

BIOLOGICAL SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 117 (BIOLOGY AND MEDICINE SERIES). 28 Mar 63 [32]p. JPRS: 18416.
Order from OTS $1.00 63-21448

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia and Yugoslavia.

DESCRIPTORS: *Abstracts, *Medicine, *Biology, Pipes, Heat, Aerosols, Glass, Measurement, Pediatrics, Diseases, Anatomy, Drugs, Analgesics, Pharmacology, Coagulation, Pathology, Surgery, Communicable diseases, Poisoning, Histology, Ophthalmology, Psychiatry, Cancer, Physiology. *Czechoslovakia, *Yugoslavia

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 128 (BIOLOGY AND MEDICINE SERIES). 8 Apr 63 [26]p. JPRS: 18603.
Order from OTS $0.75 63-21532

Consists of abstracts of articles from the technical and scientific journals of Czechoslovakia.

DESCRIPTORS: *Abstracts, *Medicine, *Biology, Viruses, Zoology, Microorganisms, Pharmacology, Genetics, *Plants (Botany), Ecology, Biochemistry, Parasitic infections, Drugs, Pathology, Neurology, Physiology, Surgery, *Diseases.

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 46 (BIOLOGY SERIES). 13 Mar 63 [9]p. JPRS: 18088.
Order from OTS $0.50 63-21306

Trans. of selected abstracts from Referativnyi Zhurnal. Biologiya (USSR) 1962, nos. 6 and 11.

DESCRIPTORS: *Abstracts, *China, *Biology, Soils, Plants, Animals, Physiology, Forestry.

RESEARCH ON HYDROCARBON-OXIDIZING BACTERIA. 13 Mar 63 [25]p. 6 refs. JPRS: 18100.
Order from OTS $0.75 63-21310

Trans. of Erdol und Kohle-Erdgas-Petrochemie (West Germany) 1962 [v. 15] no. 6, p. 426-429; and Zeitschrift fur Allgemeine Mikrobiologie (Germany) 1962, v. 2, no. 2, p. 157-163.

DESCRIPTORS: Hydrocarbons, Oxidation, *Bacteria, *Petroleum, *Gases, *Geological survey, Microorganisms, Identification, Soils

Contents:
The regional distribution of hydrocarbon-oxidizing bacteria in various soils, by Herbert Volz and W. Schwartz
Research on pure cultures of hydrocarton-oxidizing bacteria, by Herbert Volz and W. Schwartz

SOVIET STUDIES IN SPACE BIOLOGY AND MEDICINE. 4 Apr 63 [17]p. JPRS: 18538.
Order from OTS $0.50 63-21498

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1963, v. 28, no. 1, p. 3-14.

DESCRIPTORS: *Exobiology, *Space biology, Mars, Medicine, *Cybernetics, *Space medicine, Evolution, Closed-cycle ecological systems

Contents:
Extraterrestrial life, by A. I. Oparin
Problems in cybernetics and space medicine, by V. V. Parin and R. M. Baevskii

Bei-Bienko, G. Ya.
BIOLOGICAL SYSTEMATICS IN THE SERVICE OF SCIENCE AND PRACTICE. 25 Mar 63 [11]p. JPRS: 18324.
Order from OTS $0.50 63-21406

Trans. of Akademiya Nauk SSSR. Vestnik, 1963 [v. 33] no. 1, p. 38-41.

DESCRIPTORS: *Taxonomy, *Plants (Botany), *Animals, Insects, Classification, Handbooks.

Kraizmer, Leonid Pavlovich.
BIONICS. 26 Mar 63 [114]p. 22 refs. JPRS: 18372.
Order from OTS $2.50 63-21427

Trans. of mono. Bionika, Moscow/Leningrad, 1962, 72p.

DESCRIPTORS: *Bionics, Engineering, *Cybernetics, Brain, Nerve cells, Nervous system, Simulation, Storage, Processing, Coding, Memory, *Information retrieval, Receptors, *Chemoreceptors, Perception

This booklet is devoted to a description of the fundamental aspects of bionics as a scientific field in which the possibilities in the use of knowledge of biological processes and methods to solve engineering problems are examined. In the booklet primary attention is fixed on matters relating to the processing of receiving, storing, transmitting, and processing information in living organisms and to the possibilities of using this knowledge in working on technical cybernetic systems in order to increase their universality, flexibility, and reliability. The booklet is intended for the reader who is familiar with the fundamentals of radioelectronics and cybernetics. (Author)

Neifakh, A.
SPACE EMBRYOLOGY: SOVIET STUDIES. 8 Apr 63 [8]p. JPRS: 18589.
Order from OTS $0.50 63-21528

Trans. of Nauka i Zhizn' (USSR) 1963 [v. 30] no. 1, p. 65-67.

DESCRIPTORS: *Space biology, *Embryology, Radiation effects, Weightlessness, Gravity, *Space environmental conditions.

Salmanov, M. A., and Sorokin, Yu. I.
PRIMARY PRODUCTION OF THE KUIBYSHEV RESERVOIR (Pervichnaya Produktsiya Kuibyshevskogo Vodokhranilishcha). 5 Dec 62, 25p. 11 refs. Trans. A-1381.
Available from OTS on loan 63-13628

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1962 [v. 27] no. 4, p. 603-613.

DESCRIPTORS: *Dams, *Organic materials, *Photosynthesis, *Plankton, Glucose, Microorganisms, Water, Hydraulic accumulators, Marine biology.

Vukasovic, P.
THE EFFECT OF DDT AND HCC (GAMMEXAN) ON SEED GERMINATION AND ON THE GROWTH OF YOUNG PLANTS (O Uticaju DDT i HCC (Gameksana) na Klijavost Semena i Porast Mladih Biljaka) tr. by Dusan Glumac and Elizabeth Tornquist. 1963, 14p. PL-480 Agr.
Order from OTS $0.50 61-11209

Trans. of Arhiv za Poljoprivredne Nauke [i Tehniku] (Yugoslavia) 1951, v. 4, no. 6, p. [76-86]

DESCRIPTORS: *Insecticides, *DDT, *Hexachlorocyclohexanes, Seeds, Growth, *Plants (Botany), Growth substances, Toxicity

Of the two insecticides applied, DDT is less toxic to plants than HCC, which is equally true for animals. While the concentration of 1 gram of pure DDT per square decimeter or 25 per mil had no effect on the germinability of beans, wheat, corn and hemp, the same concentration of HCC delayed germination by between 24 and 28 hours, depending on the species. The difference in toxicity was much more conspicuous in the development of embryos: a concentration of 0.1 gram HCC per square decimeter or 2.5 per mil prevented any development of the embryos of beans, corn and wheat, killing them in a comparatively short time, while hemp embryos developed at about the same rate as the embryos of the check plants. Finally, even the concentrations of 0.5 per mil of HCC caused a series of morbid symptoms, killing the young plants after 23 to 25 days, while concentrations of DDT of the same percentage caused a stronger root development, a greater number of leaflets and a much greater weight of the plants than that of the check group . The two insecticides in general have a rather weak toxic effect on plants.

Anatomy and Physiology

Aksenova, O. N. and Gladysheva, A. A.
MATERIAL FOR THE HISTORY OF THE DEPARTMENT OF ANATOMY IN THE STATE CENTRAL ORDER OF LENIN INSTITUTE OF PHYSICAL CULTURE IM. I. V. STALIN (1920-60). 18 June 62 [9]p. JPRS: 14268.
Order from OTS or SLA $1.10 62-25495

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) [1961] v. 41, no. 10, p. 114-118.

DESCRIPTORS: History, Scientific organizations, *Anatomy, *Physical fitness, *Training, Personnel

Balthaser, Karl.
MORPHOLOGY OF THE SPINIAL TIBIAL AND PERONEAL NUCLEI IN THE CAT: TOPOGRAPHY, ARCHITECTURE, COURSE OF AXONS AND DENDRITES OF MOTOR AND INTERMEDIARY NEURONS IN THE SEGMENTS L6-S2 (Morphologie der Spinalen Tibialis und Peronaeus Kerne bei der Katze). [1962] 33p. (figs. tables refs. omitted).
Order from SLA $3.60 62-20438

Trans. of Arch[iv] f[ür] Psych[iatrie und Nervenkrankheiten] (Germany) 1952, v. 188, p. 345-378.

DESCRIPTORS: *Morphology, Histology, Nerves, Legs, *Spinal cord, *Nerve cells, *Nuclei (Biology), Motor reactions.

Ivanov, K. P., Brandis, S. A., and Pilovitskaya, V. N.
PHYSIOLOGICAL MECHANISMS OF CHEMICAL THERMOREGULATIONS [AND] FUNCTIONAL CHANGES IN AN ORGANISM AS A RESULT OF BREATHING A HIGH OXYGEN-LOW CARBON DIOXIDE GAS MIXTURE FOR MANY HOURS AT REST AND DURING EXERCISE. 14 Feb 63 [33]p. 29 refs. FTD-TT-62-1176.
Order from OTS or SLA $3.60 63-15759

Unedited rough draft trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 4, p. 436-443 and 455-463.

DESCRIPTORS: Physiology, Biochemistry, *Body temperature, *Oxygen, Muscles, Motor reactions, Shivering, Gases, *Respiration, *Carbon dioxide, Oxygen consumption, Hypoxia, *Tolerances (Physiology), Exercise.

Parin, V. V.
IT HAS BEEN ACCOMPLISHED. 18 Jan 63, 10p. FTD-62-1607.
Order from OTS or SLA $1.10 63-15524

Unedited rough draft trans. of Smena (USSR) 1961 [v. 38] no. 7, p. 3-4.

DESCRIPTORS: Man, *Space environmental conditions, *Space flights, *Adaptation (Physiology), Space medicine, *Astronauts.

Parin, V. V.
MAN IN COSMOS. 17 Jan 63, 11p. FTD-TT-62-1606.
Order from OTS or SLA $1.60 63-15510

Unedited rough draft trans. of Smena (USSR) 1961 [v. 38] no. 13, p. 22-23.

DESCRIPTORS: Man, *Space environmental conditions, *Space flight, Space medicine, *Adaptation (Physiology), *Astronauts.

Pavlov, I. P.
TOWARD A THEORY OF THE INNERVATION OF THE BLOOD VESSELS. [1962] 5p. 1 ref.
Order from SLA $1.10 62-20184

Trans. of Pflüger's Archiv f[ür] d[ie] Ges[amte] Physiol[ogie des Menschen und der Tiere] (Germany) 1879, v. 20 [no. 4/5] p. 210-214.

DESCRIPTORS: Theory, *Nerves, *Blood vessels, Autonomic nervous system, Vagus nerve, *Blood pressure.

Biochemistry

Delva, V. D.
COPPER CONTENT IN VARIOUS CYTOARCHITECTONIC FIELDS OF THE HUMAN CEREBRAL CORTEX. [1962] [2]p.
Order from OTS or SLA $1.10 62-20366

Partial trans. (table and fig. only) of Zhurnal Nervopatologii i Psikhiatrii (USSR) 1961, v. 61, no. 12, p. 1785-1788.

DESCRIPTORS: *Copper, *Cytochemistry, *Cerebral cortex, Anatomy

Gubenko, T. L.
OBTAINING GAMMA-GLOBULIN FROM PLACENTAL SERUM BY THE RIVANOL-ALCOHOL METHOD UNDER PRODUCTION CONDITIONS. [1962] [8]p. 17 refs.
Order from OTS or SLA $1.10 63-13034

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1961, v. 33, no. 1, p. 14-21.
Another trans. is available from ATS $8.50 as ATS-29P60U [1962] 6p.

DESCRIPTORS: *Blood proteins, Preparation, *Fetal membranes, *Serum, Gamma globulin, Alcohols.

A combined Rivanol-alcohol method is recommended for obtaining gamma-globulin from placental serum. Employing the Rivanol-alcohol method makes it possible: (1) to cut the fractionation time to less than half of that required with the alcohol method; (2) to increase the yield of gamma-globulin per liter of serum; (3) to insure a high degree of purity of the gamma-globulin. The Rivanol-alcohol method does not require protracted work at low temperatures, since the first stage and the elimination of Rivanol are conducted at room temperature. It is recommended that the Rivanol be precipitated from the filtrate to a final concentration of 0.85% by the use of NaCl, and not by activated charcoal. (Author)

Hartmann, F.
THE BIOCHEMICAL AND MACROMOLECULAR BASES OF A PATHOLOGY OF CONNECTIVE TISSUE (Die Biochemischen und Makromolekularen Grundlagen einer Pathologie der Bindegewebe). Aug 62, 24p. 87 refs.
Order from SLA $2.60 62-20121

Trans. of Internist (Germany) 1961, v. 2, p. 403-412.

DESCRIPTORS: Biochemistry, *Molecular structure, *Pathology, *Connective tissues, Collagen, Cells (Biology).

Ivanova, T. N., Pravdina, N. I., and Rubel, L. N.
ON FREE NUCLEOTIDES OF THE BRAIN TISSUE AND THE TURNOVER RATE OF THEIR PHOSPHATE GROUPS (SUMMARY). [1962] [1]p.
Order from OTS or SLA $1.10 62-20355

Partial trans. (summary) of #Biokhimiya (USSR) 1962, v. 27, [no. 2] p. 293-303.

DESCRIPTORS: *Nucleotides, *Brain, Tissues (Biology), *Phosphates, Adenosine phosphates, Tracer studies.

Medvedev, Zh. A., and Khavkin, E. E.
A NEW GROUP OF BIOLOGICALLY IMPORTANT COMPOUNDS (NUCLEOTIDE-PEPTIDES) (Nukeotid-Peptidy -- Novaya Gruppa Biologicheski Vazhnykh Soedinenii). 4 Jan 63, 40p. 108 refs. Trans. A-1385.
Order from OTS or SLA $3.60 63-15461

Trans. of [Moskovskaya] Sel'skokhozyaistvennaya Akademiya. Izvestiya (USSR) 1962, no. 2(45) p. 188-189.

DESCRIPTORS: Biochemistry, *Nucleic acids, Cytochemistry, *Nucleotides, *Peptides, Ribonucleic acids, Synthesis Desoxyribonucleic acids.

Polyakova, N. M. and Lishko, V. K.
FRACTIONATION OF SOLUBLE BRAIN PROTEINS. [1962] [1]p.
Order from OTS or SLA $1.10 62-20319

Partial trans. (summary) of [Ukrayins'kyi Biokhimichnyi Zhurnal] (USSR) 1962, v. 34 [no. 1] p. 10-22.

DESCRIPTORS: Separation, *Proteins, *Brain, *Electrophoresis, Ammonium radicals, Sulfates, *Fractionation.

The soluble proteins of the brain were separated into seven fractions. The investigations showed that proteins salted out at 0.3 and 0.4 ammonium sulfate saturation are intensely absorbed on filter paper during movement in an electric field, and are poorly separated into fractions. The proteins salted out at a higher degree of saturation of ammonium sulfate (0.5 and higher) give a more distinct separation into fractions in paper electrophoresis. In electrophoresis on agar gel the proteins which do not separate well into fractions remain in the place where they were applied, and their quantity is greater in proteins salted out at 0.3 and 0.4 saturation - 66.5 and 55.3% respectively. In the fraction of proteins salted out at higher degrees of saturation of ammonium sulfate, the quantity of unseparated proteins decreased, and there is a corresponding increase in the percentage of proteins readily separated into fractions. In electrophoresis on agar gel the proteins of the initial brain extract separate into 12 fractions, while the proteins salted out and dialysed against distilled water separate into 16 fractions. This indicates that during dialysis against water the proteins which hindered the distinct separation into fractions are precipitated out and removed. (Author)

Sapozhnikov, D. I., Alkhazov, D. G. and others.
INCORPORATION OF O^{18} FROM HEAVY OXYGEN WATER IN VIOLAXANTHENE UNDER THE EFFECT OF LIGHT ON PLANTS, tr. by S. Shewchuck. [1962] 12p. 12 refs.
Order from OTS or SLA $1.60 UCRL Trans-737

Trans. of Botanicheskii Zhurnal (USSR) 1961, v. 46, p. 673-676.

DESCRIPTORS: *Oxygen, *Heavy water, Light, *Plants, *Photosynthesis, *Carotenoids, Chromatographic analysis, Algae, Fluorine, Radiobiology.

Smirnov, A. A., , Chirkovskaya, E. V., and Manukian, K. G.
A STUDY OF BRAIN PHOSPHATIDES BY CHROMATOGRAPHY ON SILICIC ACID IMPREGNATED PAPER (SUMMARY). [1962] [1]p.
Order from OTS or SLA $1.10 62-20367

Partial trans. (summary) of #Biokhimiya (USSR) 1961, v. 26, no. 6, p. 1027-1033.

DESCRIPTORS: *Brain, Biochemistry, Paper chromatography, *Silicic acids, *Phospholipids.

The phosphoinositide phosphorus turnover rate is higher in the brain cortex and in cerebellum, and slower in white matter and in the medulla. On the contrary, the P^{32} incorporation rate in phosphatidyl choline and the phospholipid of spot 7 (polyglycerophosphatide) is much higher in white matter and medulla as compared with the cortex and cerebellum. Heart muscle phospholipides differ greatly in their relative concentration and their P^{32} incorporation rate from the lipides of the brain. Spot 1 is totally absent in the chromatogram of the heart. The above method of phospholipid partition by paper chromatography permits an accurate determination of individual phospholipides in 10-15 mg samples of wet brain tissue. (Author)

Turova, N. F.
RIBONUCLEIC ACID IN THE BRAIN OF ANIMALS DURING ELECTRICALLY INDUCED CONVULSIONS. [1962] [5]p.
Order from OTS or SLA $1.10 62-20305

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1961, v. 33, no. 6, p. 805-809.

DESCRIPTORS: *Ribonucleic acids, *Brain, Animals, *Electroshock, *Convulsions, Biochemistry, Microphotography, Cytochemistry, Nucleic acids

Botany

Barashkov, G. K.
CHEMISTRY OF DIATOMS (DIATOMEAE) (Khimiya Diatomovykh Vodoroslei (Diatomeae)). [1962] 24p. 41 refs. Trans. A-1379.
Order from OTS or SLA $2.60 63-13589

Trans. of Botanicheskii Zhurnal (USSR) 1960, v. 45, no. 9, p. 1350-1356.
Abstract trans. is available from OTS or SLA $1.10 in 62-32780, AID-62-115, 1 Aug 62 [10]p.

DESCRIPTORS: *Algae, Chemical analysis, Carbohydrates, Lipids, Photosynthesis, *Biochemistry, Bibliography, Plants (Botany), Plankton, Purification, Pectins, Petroleum, *Nitrogen compounds, Protein solutions, Acids, *Polysaccharides, Synthesis, Sedimentation.

A review of the literature.

Guseva, K. A.
THE ROLE OF BLUE-GREEN ALGAE IN INTERNAL RESERVOIRS. 19 Mar 63 [5]p. JPRS: 18212.
Order from OTS $0.50 63-21358

Trans. of Akademiya Nauk SSSR. Vestnik, 1962, [v. 32] no. 12, p. 109-110.

DESCRIPTORS: *Algae, *Lakes, Distribution, Colors, Marine biology.

Nikoro, Z. S.
THE NATURE OF HETEROSIS AND METHODS OF ITS UTILIZATION IN PLANT SELECTION. 25 Mar 63 [38]p. 5 refs. JPRS: 18333.
Order from OTS $1.00 63-21414

Trans. of Moskovskoe Obshchestvo Ispytatelei Prirody. Byulleten'. Otdel Biologicheskii (USSR) 1961, v. [36](66) no. 4, p. 119-133.

DESCRIPTORS: *Plants (Botony), Genetics, *Corn, Mathematical analysis, Growth, Gametes, Mathematical prediction

The comparative study of simple and triple corn hybrids revealed that the crossbred vigor depends chiefly upon the heterozygosis level and this background provides a play for the activity of the dominant factors. The general combination value of the line is determined by the content of the dominant factors which are revealed only in the hybrid owing to the removal of the inbred depression. The specific combination value of the line is determined by the other line. On the basis of the above cited considerations there is a possibility to predict and estimate the value of a triple and double hybrid in accordance with the indices of simple hybrides. (Author)

Shkol'nik, M. Ya., and Maevskaya, A. N.
MORPHOLOGICAL CHANGES IN SUNFLOWER INDUCED BY BORON DEFICIENCY (Morfologicheskie Izmeneniya u Podsolnechnika pri Nedostatke Bora) tr. by Lydia Venters. Oct 62, 8p. 37 refs.
Order from OTS or SLA $1.10 AEC-tr-5490

Trans. of Nauchnye Doklady Vysshei Shkoly. Biologicheskie Nauki (USSR) 1961, no. 1, p. 143-[148]. Another trans. is available from OTS or SLA $1.10 as AEC-tr-4796, Sep 61 [8]p.

DESCRIPTORS: *Plants, Growth, Soils, Morphology, *Boron, Deficiency diseases.

For abstract see Technical Translations 8: 95, 1962.

Shkol'nik, M. Ya., and Solov'eva-Troitskaya, E. A.
ON THE PHYSIOLOGICAL ROLE OF BORON. 2. THE SIGNIFICANCE OF TEMPERATURE IN THE ELIMINATION OF BORON DEFICIENCY BY SUPPLYING RNA (O Fiziologicheskoi Roli Bora. 2. Znachenie Temperaturnogo Faktora v Ustranenii Bornoi Nedostatochnosti Nukleinovoi Kislotoi) tr. by Lydia Venters. Oct 1962, 13p. 30 refs.
Order from OTS or SLA $1.60 AEC-tr-5492

Trans. of Botanicheskii Zhurnal (USSR) 1962, v. 47, no. 5, p. 626ff.

DESCRIPTORS: Physiology, Temperature, *Deficiency diseases, *Boron, Nucleic acids, Inhibition, *Ribonucleic acids, *Plants (Botany), Biosynthesis, Growth.

It was found that at high temperatures (25° to 40° C) it is impossible even partially to eliminate the symptoms of boron deficiency by introducing free RNA into the nutrient solution. By doubling the concentration of RNA added to the nutrient solution at high temperatures in the absence of boron, a sunflower plant was obtained, which was 66 cm high, had 11 pairs of leaves and which laid a small anthodium. The fact that the symptons of boron deficiency may be significantly eliminated at moderate temperatures (15° to 20° C) detected in the experiments with sunflower, was confirmed by the experiments with flax. An assumption is proposed that the failure to eliminate the boron deficiency by means of free RNA at high temperatures (20° to 40° C) is associated with an increased requirement of plants for boron; the increased requirement is caused by: (1) disturbances in the energy metabolism at temperatures close to critical (30° to 40° C); (2) by a substantial increase of the energy metabolism at optimum temperatures (of the order of 20° to 30°) of growth. (See also: TT 63-13931).

Shkol'nik, M. Ya., and Maevskaya, A. N.
SIGNIFICANCE OF BORON IN NUCLEIC ACID METABOLISM (Znachenie Bora v Nukleinovom Obmene) tr. by Lydia Venters. Oct 62, 12p. 28 refs.
Order from OTS or SLA $1.60 AEC-tr-5491

Trans. of #Fiziologiya Rastenii (USSR) 1962, v. 9, no. 3, p. 270ff.

DESCRIPTORS: *Boron, *Nucleic acids, *Metabolism, Ribonucleic acids, *Plants (Botany), Synthesis, Growth, Deficiency diseases.

The RNA content was determined in bean and sunflower plant grown on a complete nutritional solution and on one without boron. The ribonucleic acid content in the tips and roots of plants deprived of boron was found to be small. The introduction of RNA in boron-deficient nutritional solutions led to the disappearance of signs of boron deficiency in sunflower and to an increase of the RNA content in young leaves. The data obtained suggest that in the absence of boron nucleic acid synthesis is violated. It is shown that the Gauch and Dugger hypothesis is untenable. In this hypothesis the death of growing points in plants deprived of boron is explained by carbohydrate hunger and the chief physiological function of boron is assumed to be the role it plays in translocation of sugars. A hypothesis is proposed according to which the death of growing points in boron-deficient plants is due to violation of nucleic acid metabolism. (Author)

Trapp, L.
PHYTOPHYSIOLOGICAL STUDIES OF TOBACCO ALKALOIDS. [1962] 3p.
Order from K-H $3.75 K-H 3166 b

Trans. of Deut[sche] Bot[anische] Ges[ellschaft]. Ber[ichte] (West Germany) 1951, v. 63, p. 35-36.

DESCRIPTORS: *Plants (Botany), Physiology, *Tobacco, *Alkaloids.

Medical Specialties and Equipment

Agadzhanyan, M. A., Akulinichev, I. T. and others.
METHOD OF FIXING ELECTRODES FOR EKG RECORDING DURING MANNED SPACE FLIGHTS.
19 Dec 62, 4p. AID rept. 62-200, AD-294 574.
Order from OTS or SLA $1.10 63-15323

Abstract trans. of Problemy Kosmicheskoi Biologii (USSR) 1962, v. 1, p. 451-459.

DESCRIPTORS: Electrodes, *Electrocardiography, *Space flight, *Medical equipment, Manned.

Ghelerter, Yuliu.
BIOGRAPHY OF PROF. V. L. BOLOGA. 9 Apr 63 [5]p. JPRS: 18592.
Order from OTS $0.50 63-21504

Trans. of Viata Medicala (Rumania) 1953, v. 10, no. 1, p. 1-2.

DESCRIPTORS: *Medicine, *Medical personnel, Rumania, Biographies

Hryger'ieva, L. V., and Yaroshenko, V. A.
ON THE SEMINATION OF AIR IN BIOTRON WARDS AND CONTROL PREMISES WITH HEMOLYTIC COCCI AND THE BIOLOGICAL PROPERTIES OF THESE COCCI (Obsimeninnya Povitrya Palat Biotrona i Kontrel'nykh Prymishchen Hemelitychnymy Kokamy ta Biologichni Vlastyvesti Estannikh). 14 Dec 62, 10p. 11 refs. Trans. V-1811.
Order from OTS or SLA $1.10 63-13591

Trans. of Mikrobiologichnyi Zhurnal (USSR) 1962, v. 24, no. 5, p. 30-34.

DESCRIPTORS: Contamination, *Air, Hospitals, *Staphylococcus, *Streptococcus, Decontamination, Growth, Medical equipment, *Controlled atmospheres.

Hemolytic staphylococci are isolated the most often (47% of specimens) from the air of biotron wards and of the control premises while β-hemolytic streptococci relatively infrequently (10.5% of specimens). No substantial difference was detected in the biological activity of strains of hemolytic staphylococci and streptococci, isolated from the air of the biotron wards and of the control premises. The degree of semination of the biotron air with pyogenic cocci is almost 2 times lower than in the control premises; this attests to a much favorable epidemiological situation of the biotron. (Author)

Neurology and Psychiatry

Kedrov, B. M. and Logvin, M. A.
THE INTERRELATIONSHIP BETWEEN TWO ASPECTS OF COGNITION [AND] THE PHYSIOLOGICAL BASIS OF CONSCIOUSNESS IN THE LIGHT OF MOST RECENT RESEARCH ON BRAIN ACTIVITY. 19 Mar 63 [27]p. JPRS: 18208.
Order from OTS $0.75 63-21356

Trans. of Nauchnye Doklady Vysshei Shkoly. Filosofskie Nauki (USSR) 1962 [v. 5] no. 5, p. 42-49 and [50-58].

DESCRIPTORS: *Brain, Reasoning, Philosophy, *Nervous system, Analyzers (Psychology) Behavior, Conditioned reflex

Khaletskii, A. M.
PROBLEM OF SOME INFECTIOUS PSYCHOSES IN CURRENT PSYCHIATRIC LITERATURE. [1962] 15p. 55 refs. [NIH] no. 276.
Order from OTS or SLA $1.60 62-23543

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1956, v. 56, no. 5, p. 395-400.

DESCRIPTORS: *Psychoses, *Infections, *Virus diseases, Encephalitis viruses, Influenza viruses, *Etiology.

Sarkisov, S. A. and Preobrazhenskaya, N. S.
INDIVIDUAL VARIABILITY OF THE STRUCTURAL CHARACTERISTICS OF THE HUMAN BRAIN. [1962] [12]p. 19 refs.
Order from OTS or SLA $1.60 62-20314

Trans. of #Zhurnal Vysshei Nervnoi Deyatel'nosti (USSR) 1961, v. 11, no. 5, p. 806-813.

DESCRIPTORS. Analysis of variance, *Anatomy, Physiology, *Brain, Man.

Pathology

RECENT ASPECTS OF SOVIET ONCOLOGY. 29 Mar 63 [14]p. JPRS: 18449.
Order from OTS $0.50 63-21459

Trans. of Sovetskoe Zdravookhranenie Kirgizii (USSR) 1962, no. 6, p. 3-7 and 27-29.

DESCRIPTORS: *Neoplasms, *Cancer, Ointments, Medical personnel, Training, Surgery, Radiobiology, Chemicals, *Hormones, Skin

Contents:
Oncological care and incidence of tumors in Kirghizistan by A. I. Saenko
Treating skin cancer with omaineprednisolone ointment, by N. V. Musin

Arnold, O. H.
THERAPY OF MALIGNANT HYPERTENSION (Therapie der Malignen Hypertonie). [Oct 62] 1p.
Order from SLA $1.10 63-10185

Trans. of Münch[ener] Med[izinische] W[ochenschrift] (West Germany) 1962, v. 104, 10 Aug, 1490.

DESCRIPTORS: *Hypertension, Therapy, Drugs, Guanethidine, *Autonomic agents, *Diuretics, Blood pressure.

There is no etiological therapy. In the malignant form, we should immediately institute energetic therapeutic measures and we must take into the bargain any severe side effects of the preparations. Among the drugs now available alpha-methyl DOPA is characterized by relatively good tolerance. Other drugs are guanethidine and the ganglionic blockers; the former is preferred by most authors. The drugs with marked depressing action cause an orthostatic hypotension, which in older persons in particular can cause circulatory disturbances in the brain and deficient renal circulation. The use of depressing drugs does not make the other therapeutic measures illusory at all. Complete sodium chloride withdrawal can never be carried out in practice as we know from experience; in this regard the physician need not be so strict since he can create a certain balance by use of saluretics. In suitable patients and after adequate information and psychological preparation, it is entirely possible for the patient to check his own blood pressure. As a rule the values of blood pressure measured by the patients are a little lower than those recorded in practice. Irregular therapy in malignant hypertension is in general worse than none at all, and the complications are no more frequent or severe than with the use of other powerful drugs. (Report quoted in its entirety)

Knyazeva, L. D. and Efimova, E. S.
CLINICAL COURSE AND CERTAIN PROBLEMS OF DIFFERENTIAL DIAGNOSIS OF Q FEVER. 12 Dec 62 [15]p. 11 refs. FTD-TT-62-1771.
Order from OTS or SLA $1.60 63-15564

Unedited rough draft trans. of Sovetskaya Meditsina (USSR) 1962 [v. 26] no. 2, p. 75-81.

DESCRIPTORS: *Q fever, Diagnosis, Epidemiology, Tests, Blood, Serum, Complement

Mikhailov, P. and Berova, N.
COLD AGGLUTININS AND CRYOGLOBULINS IN DERMATOSES ASSOCIATED WITH THE EFFECTS OF COLD. 15 June 62 [10]p. 25 refs. JPRS: 14119.
Order from OTS or SLA $1.10 62-25165

Trans. of Vestnik Dermatologii i Venerologii (USSR) 1962 [v. 36] no. 3, p. 14-19.

DESCRIPTORS: *Exposure, *Agglutinins, *Globulins, Hypothermia, Skin, Diseases, Adaptation (Physiology), Immunity

Among some of the patients with cold dermatoses studied, changes were demonstrated in the titer of cold agglutinins and the presence of cryoglobulins was established. There is no parallel between the level of cold agglutinins and cryoglobulins, on the one hand, or between these levels and the severity of the clinical changes, on the other hand. The most frequent and the most pronounced biochemical and immunological changes were detected in cold urticaria. These changes remained even after the clinical features had disappeared, and this fact is of prognostic significance. The changes which were noted in the levels of cold agglutinins and cryoglobulins make it necessary to look for them in every dermatosis resulting from exposure to cold in order to elucidate its pathogenesis more fully.

Pogodaev, K. I. and others.
PROTEIN METABOLISM IN BRAIN TISSUES DURING RECURRING EPILEPTIC FITS. [1962] [23]p. 47 refs.
Order from OTS or SLA $2.60 62-20315

Trans. of Ukr[ayins'kyi] Biokh[imichnyi] Zhurn[al] (USSR) 1960, v. 32, no. 6, p. 808-822.

DESCRIPTORS: *Proteins, *Metabolism, *Brain, *Tissues (Biology), Convulsions, *Epilepsy

The intensity of protein metabolism in the brain of animals depends on the number and frequency of repeated convulsive attacks, induced by electricity: if attacks are frequently repeated without leading to deep exhaustion the metabolic processes are carried out more intensively than under normal circumstances and under conditions of a few repetitions only, taking into account at the same time the condition following convulsive attacks, which is characterized by an essentially inhibitive state in the C. N. S. As the number of convulsive attacks is increased the intensity of metabolic processes during the attacks is lowered. (Author)

Rossi, P., Gambini, E., and Cinotti, G. A.
ARTERIO-VENOUS RENAL FISTULAS (Le Fistole Artero-Venose Renali). [1962] [15]p. (figs. omitted).
Order from SLA $1.60 62-20437

Trans. of Rassegna di Fisiopatologia [Clinica e Terapeutica] (Italy) 1960, v. 32, p. 136-150.

DESCRIPTORS: *Blood vessels, *Kidneys, Diseases, Blood circulation, Diagnosis, Surgery, Cardiovascular system, *Anomalies.

Yarovoi, L. V.
CLINICAL ASPECTS, DIAGNOSIS, AND TREATMENT OF GOAT-SHEEP TYPE BRUCELLOSIS IN THE GENERALIZATION STAGE OF INFECTION WITH FOCAL LESIONS. 2 Jan 63 [16]p. 3 refs. FTD-TT-62-1772.
Order from OTS or SLA $1.60 63-15558

Unedited rough draft trans. of Sovetskaya Meditsina (USSR) 1962 [v. 26] no. 3, p. 58-65.

DESCRIPTORS: Diagnosis, Therapy, *Brucellosis, Antibiotics, Vaccines, Infections, Bovines, Mammals

Yarovoi, L. V.
CLINICAL FEATURES AND TREATMENT OF BRUCELLOSIS OF THE GOAT-SHEEP TYPE IN THE STAGE OF FOCAL LESIONS. 28 Dec 62 [15]p. 11 refs. FTD-TT-62-1774.
Order from OTS or SLA $1.60 63-15557

Unedited rough draft trans. of Sovetskaya Meditsina (USSR) 1962 [v. 26] no. 8, p. 72-78.

DESCRIPTORS: Therapy, *Brucellosis, Diagnosis, Blood, Serum, Infections, Bovines, Mammals

Zilber, L. A.
POSSIBLE IMMUNOLOGICAL CONTROL OF TUMOR GROWTH: PERSPECTIVES IN IMMUNOLOGICAL CONTROL OF TUMOR PROLIFERATION (Perspectivele Controlului Imunological Proliferarii Tumorale) refs. tr. by Tatiana Boldyreff. 9 Jan 63, 19p. (figs. omitted).
Order from OTS or SLA $1.60 63-15591

Trans. of Akad[emiya] Med[itsinskikh] Nauk SSSR, Vestnik, 1960 [v. 15] no. 12, p. 15-21 (pub. in Rumanian).
Another trans. is available from OTS $2.75 in 61-21573, JPRS-9232, 5 May 61, 145p.

DESCRIPTORS: Cancer, *Tumors, *Growth, *Inhibition, *Immune serums, Neoplasms, Antigens and antibodies, Immunity.

A literature review.

Zhdanov, V. M., Azadova, N. B., and Kul'berg, A. Ya.
LABELING OF ANTIBODIES WITH AN ORGANIC MERCURY COMPOUND (Markirovka Antitel Rtutnoorganicheskim Soedineniem). 3 Jan 63, 4p. 3 refs.
NIH no. 1-2-63.
Order from OTS or SLA $1.10 63-15575

Trans. of #Voprosy Virusologii (USSR) 1962, v. 7, no. 4, p. 110-111.

DESCRIPTORS: *Antibodies, *Labeled substances, *Mercury, *Metalorganic compounds, *Viruses, *Cells (Biology), *Tracer studies, Proteins, Synthesis.

Zhdanov, V. M.
MECHANISM OF INTERACTION OF VIRUSES WITH CELLS AND IMMUNITY TO VIRUSES AT THE CELLULAR LEVEL (Mekhanizm Vzaimodeistviya Virusov s Kletkami i Immunitet k Virusam na Kletochnom Urovne). 26 Dec 62, 13p. NIH no. 12-26-62.
Order from OTS or SLA $1.60 63-15164

Trans. of Akademiya Meditsinskikh Nauk SSSR, Vestnik, 1962 [v. 17] no. 5, p. 5-13.
Another trans. is available from OTS or SLA $10.10 in 62-33014, JPRS-15239, 12 Sep 62 [124]p.

DESCRIPTORS: *Adaptation (Physiology), *Cells (Biology), *Virus infections, Viruses, Immunity, *Antigens and antibodies, *Nucleic acids.

Pharmacology and Toxicology

REPORT OF THE SWISS LEADED GASOLINE COMMISSION TO THE FEDERAL COUNCIL ON ITS ACTIVITIES DURING THE PERIOD 1947-60 (Bericht der Eidg. Bleibenzin-Kommission an den Bundesrat über ihre Tätigkeit im Zeitraum 1947-60). June 62 [93]p.
Order from SLA $8.60 62-18762

Trans. of Mitteilungen aus dem Gebiete der Lebensmitteluntersuchungen und Hygiene (Switzerland) 1961, v. 52, no. 3, p. 135-244.

DESCRIPTORS: *Gasoline, *Lead compounds, Ethyl radicals, *Toxicity, Skin, Eyes, Respiratory system, Blood, *Exhaust gases, *Atmospheric pollution.

Alo, F. d'.
THE PROBLEM OF p-OXYPROPIOPHENONE (Il Problema del p-Ossipropiofenone). Aug 62, 8p. 29 refs.
Order from SLA $1.10 62-20031

Trans. of il Farmaco; Ed[izione] Prat[ica] (Italy) 1961, v. 16 [no. 7] p. 338-343.

DESCRIPTORS: Drugs, *Toxicity, *Antimetabolites, Pituitary gland, Secretions, *Phenones, *Propionic acids.

Bein, H. J.
MODIFICATIONS OF THE CAROTID SINUS REFLEXES WITH RISING BLOOD PRESSURE DUE TO VARIOUS AGENCIES: A CONTRIBUTION TO THE QUESTION OF EXPERIMENTAL HYPERTONIA. [1962] 12p. (figs. omitted) 12 refs.
Order from SLA $1.60 62-20176

Trans. of Helv[etica] Physiol[ogica et Pharmacologia] Acta (Switzerland) 1947, v. 5, p. 169-177.

DESCRIPTORS: *Drugs, *Hypotension, *Sympathomimetic agents, *Carotid sinus, Epinephrine, Renin, Blood pressure, *Hypertension, Reflexes, Arteries.

Alterations of the carotid sinus reflexes occur after the injection of pressor agents. These alterations differ, both qualitatively and quantitatively, for adrenalin, tyramine, and renin. The occlusion reflex is markedly enhanced during acute renal hypertonia and during the pressor response to renin, while it is weakened after adrenalin and remains virtually the same after tyramine. The reflex depressor response to an increase of intra-sinus pressure is lessened during all the forms of hypertonia mentioned. Enhancement of the carotid sinus reflex as blood pressure increases is found equally among the "physiological" blood pressure variations, but is clearly not as great during spontaneous variations of blood pressure as during acute renal hypertonia. It is highly improbable that either an "adrenalin" or a "renin" regulation is at its basis. (Author)

Belova, I. P., and Muraveiskaya, V. S.
HISTOPATHOLOGICAL CHANGES IN THE ORGANS OF ANIMALS AFTER ADMINISTRATION OF THE ANTIBIOTIC OLIVOMITSINA (Gistopatologicheskie Izmeneniia v Organakh Zhivotnykh Posle Vvedeniya Antibiotika Olivomitsina). 19 Nov 62, 9p. 19 refs.
NIH no. 11-6-62.
Order from OTS or SLA $1.10 63-13705

Trans. of #Antibiotiki (USSR) 1962, [v. 7] no. 3, p. 57-59.

DESCRIPTORS: Histology, Pathology, *Animals, *Antibiotics, *Drugs, *Toxicity, Dogs, Rabbits, *Kidneys.

At intravenous injections of olivomycin into rabbits and dogs considerable lesions were revealed, chiefly in the kidneys of the test animals. Prolonged administrations of the olivomycin in relatively small doses (0.1 mg/kg) led to impairment of only certain glomeruli. Increase of dose of the preparation (0.33 mg/kg) and more prolonged administrations of the antibiotic to dogs in a dose of 0.1 mg/kg intensified the affection of the glomeruli with a predominance of intracapillary symptoms. At administration of olivomycin in a dose of 0.33 mg/kg to dogs, besides the alterations of the glomeruli, considerable affection of the canaliculi of the epithelium was observed. Administration of olivomycin to rabbits in a dose of 1 mg/kg (8-19 injections) led to lesion of a large group of glomeruli and canalicular epithelium and was accompanied by intensive proliferation of the stroma. (Author)

Brazhnikova, M. G., Kruglyak, E. B. and others.
THE ISOLATION, PURIFICATION AND STUDY OF CERTAIN PHYSICOCHEMICAL PROPERTIES OF THE NEW ANTIBIOTIC OLIVOMYCIN. 11 Oct 62, 8p. 7 refs. NIH no. 10-14-62.
Order from OTS or SLA $1.10 63-13017

Trans. of #Antibiotiki (USSR) 1962, v. 7, no. 3, p. 39-44.

DESCRIPTORS: Separation, Purification, *Antibiotics, Fungi, *Acetinomyces, Drugs.

From the culture fluid of the ray fungus, Actinomyces olivoreticuli, a new antibiotic, Olivomycin was isolated. In the present report the method of isolation of the antibiotic from culture fluid is described, certain of its physicochemical constants are set forth, and comparison is made of the Olivomycin with antibiotics already described in literature. (Author)

Degkwitz, R. and Nesswetha, L.
CLINICAL PARTICULARITIES IN A CASE OF DORIDEN INTOXICATION (SUICIDAL ATTEMPT) (Klinische Besonderheiten bei einer Doridenvergiftung (Suicidversuch)). Sep 62, 3p. 3 refs.
Order from SLA $1.10 62-20029

Trans. of der Nervenarzt (Germany) 1960, v. 31, no. 10, p. 471-472.

DESCRIPTORS: *Drugs, *Doriden, Toxicity, Addiction, *Glutaric acids, Imides, *Convulsions.

The type of convulsive phenomena differed in the SE three cases. One case developed carpopedal spasms, the other tetanic convulsions in rapid alternation not only in the extensor but also the flexor muscles of all extremities, while one case had extension spasms. It is not yet possible to find a single denominator in these phenomena. Nor is there as yet any explanation for the occurrence of the convulsions. It is noteworthy though that Doriden and Eukraton are glutaric acid imides. Doriden is α-phenyl-α-ethyl-glutaric acid imide, Eukraton is β-methyl-β-ethyl glutaric acid imide. Since Contergan (Thalidomide) which is chemically closely related(N-phythalyl-glutaric acid imide) is also a spasm-promoting drug we can look to the chemical structure as such or to degradation products of the glutaric acid imides with a certain probability as the cause for the convulsions in the Doriden intoxications. (Author)

Ermol'eva, Z. V., Furer, N. M. and others.
EXPERIMENTAL STUDY AND CLINICAL USE OF LYSPZYME. 4 Apr 63 [19]p. 20 refs. JPRS: 18533.
Order from OTS $0.50 63-21496

Trans. of #Antibiotiki (USSR) 1963, v. 8, no. 1, p. 39-45.

DESCRIPTORS: *Drugs, *Antibiotics, *Lysozyme, Enzymes, Inhibition, Virus infections, *Communicable diseases, Cancer, Cells (Biology)

A study was made of the antibacterial, antiviral, and antitumor effect of lysozyme prepared by the method of direct crystallization from egg albumin. Experiments on chick embryos and mice in models of staphylococcal- and coli-sepsis showed that lysozyme had both a prophylactic and therapeutic effect on the two infections. In monkey kidney tissue cultures 250-500γ of lysozyme prevented the cytopathogenic action of the influenza virus and of adenoviruses. In human cancer cell cultures (HeLa and HEp2) 500-2000γ/ml of lysozyme suppressed development of the monolayer of cells when introduced into the medium before the start of cultivation; its effect on the formed layer was less pronounced. Lysozyme inhibited dehydrogenase activity and respiration of human tumor cells. The rate of growth suppression of Ehrlich's tumor cells in animal experiments was up to 45%. Lysozyme has been successfully used to cleanse carriers of staphylococci that were resistant to other antibiotics. (Author)

Gauze, G. F., Ukholina, R. S., and Sveshnikova, M. A.
OLIVOMYCIN, A NEW ANTIBIOTIC PRODUCED BY ACTINOMYCES OLIVORETICULI. 11 Oct 62, 6p. 2 refs. NIH no. 10-12-62.
Order from OTS or SLA $1.10 63-13016

Trans. of #Antibiotiki (USSR) 1962, v. 7, no. 3, p. 34-38.

DESCRIPTORS: *Antibiotics, *Drugs, Inhibition, Growth, *Tumors, *Staphylococcus, Culture media, Mutations, Spectrographic analysis.

The new antibiotic Olivomycin, which has antitumor action, is produced by a ray fungus that can be referred to the species Actinomyces olivoreticuli. This antibiotic accumulates in culture field, and its biological activity can be determined by the diffusion-in-agar method, using as test-objects mutants of staphylococci with oxidation deficiency and as standard, a preparation of crystallic Olivomycin. The most favorable nutrient medium for production of Olivomycin is one containing soybean flour and glucose. (Author)

Giroud, A., Tuchmann-Duplessis, H., and Mercier-Parot, L.
OBSERVATIONS ON THE TERATOGENIC REPERCUSSIONS OF THALIDOMIDE IN MICE AND RABBITS (Observations sur les Répercussions Tératogènes de la Thalidomide chez la Souris et le Lapin). Aug 62 [1]p.
Order from SLA $1.10 62-20146

Trans. of [la] Presse Méd[icale] (France) 1962, v. 70 [no. 27] p. 1365.

DESCRIPTORS: *Drugs, *Thalidomide, Toxicity, *Congenital anomalies, Mice, Rats.

Thalidomide, a hypnotic apparently well tolerated by pregnant animals, disturbs pregnancy rats, mice and rabbits. In rats we observed up to 60% of total absorptions; the average number of fetuses per litter was thus reduced by 2/3. In the two other species examined, mice and rabbits, thalidomide caused a very great percentage of absorptions and in addition was teratogenic. In mice the frequency of absorptions of fetuses for the different strains ranged between 40 and 90%. According to the doses, 5 - 10.5% of the surviving fetuses had obvious malformations; harelip, cleft palate, inability to close the eyelids and torsions of the tail. In rabbits smaller doses reduced the number of fetuses by 50%. Among the surviving animals 30% showed severe anomalies. These involved the brain, encephalocele and anencephaly, the skeletal system: axial torsion and limbs with malformations of the "clubfoot" type. These results furnish new evidence of the danger for the embryo of drugs which do not harm the mother. (Author)

Guryanova, G.
CHANGES IN RESPIRATION OF THE BRAIN, HEART MUSCLE, AND LIVER AND THE CONTENT OF ADENOSINETRIPHOSPHATE IN THE BRAIN DURING PROLONGED MEDICAMENTAL SLEEP. [1962] [19]p. (experimental part omitted) 39 refs.
Order from OTS or SLA $1.60 62-20365

Partial trans. of Tartu U. Uchenye Zapiski (Estonian SSR) 1957, v. 52, p. 184-205.

DESCRIPTORS: *Respiration, Brain, Cardiac muscle, Liver, *Adenosine phosphates, *Sleep, *Hypnotics and sedatives, Barbiturates, *Oxygen consumption. Drugs.

Maggi, A. L. C., Meeroff, M., and Cohen, J.
ASCITIC CIRRHOSIS: ITS TREATMENT WITH TESTOSTERONE (La Cirrosis Ascitica: Su Tratamiento con Testosterona). Oct 62 [1]p.
Order from SLA $1.10 63-10178

Partial trans. (summary) of Rev[ista] Med[ica de] Chile, 1961, v. 89, p. 840-843.

DESCRIPTORS: *Ascites, Diseases, *Liver, Therapy, *Testosterone, Drugs.

Maşhkovskii, M. D.
PSYCHOPHARMACOLOGICAL AGENTS (OR REMEDIES) OF THE STIMULATING TYPE. [1962] [24]p. (figs. omitted).
Order from OTS or SLA $2.60 62-20368

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1961, v. 16, no. 10, p. 68-78.
Another trans. is available from OTS or SLA $3.60 in 62-23339, JPRS-12767, 2 Mar 62 [34]p.

DESCRIPTORS: *Drugs, *Psychoses, *CNS stimulants, *Psychoanaleptic agents, *Autonomic agents, *Tranquilizers, Pharmacology, Epinephrine, Isoniazid, Reserpine, Benzedrine sulfate, Barbituates, Galanthamine, Piperidines.

Shishkin, P. N., Kadiseva, E. A., and Fedorova, G. B.
THE TREATMENT OF SEBORRHEA OF THE HAIRY PORTION OF THE SCALP WITH SULSEN. [1962] 3p.
Order from OTS or SLA $1.10 62-20172

Trans. of Vestnik Dermatologii i Venerologii (USSR) 1961, v. 35 [no. 7] p. 49-50.

DESCRIPTORS: Therapy, *Skin, Glands, Diseases, *Drugs, *Selenium compounds, Sulfides, Soaps

Symanski, H.
SEVERE HEALTH INJURIES RESULTING FROM OCCUPATIONAL EXPOSURE TO NITROGLYCOL (Schwere Gesundheitsschaedigungen durch Berufliche Nitroglykoleinwirkung). [1962] 15p. (figs. tables refs. omitted).
Order from SLA $1.60 62-18727

Trans. of Archiv f[ür] Hygiene u[nd] Bakteriologie (West Germany) 1952, v. 136 [no. 2] p. 139-158.

DESCRIPTORS: *Industrial medicine, *Toxicity, *Glycerols, *Poisoning, Production, *Explosives, *Glycols, *Nitrogen compounds.

Udintsev, N. A.
THE EFFECT OF GLUTAMIC ACID ON METABOLISM DURING CONDITIONS OF HYPOXIA. [1962] 2p.
Order from OTS or SLA $1.10 62-20329

Trans. of Voprosy Meditsinkoi Khimii (USSR) 1960, v. 6 [no. 6] p. 645-646.

DESCRIPTORS: Drugs, *Glutamic acid, *Metabolism, *Hypoxia, Oxidases.

Van, Tay-an and Gelekhova, M. G.
THE INFLUENCE OF THE CERVICAL SYMPATHETIC NERVE AND OF SOME PHARMACOLOGICAL AGENTS ON THE RECRUITMENT REACTION. [1962] 18p. 25 refs.
Order from OTS or SLA $1.60 62-20307

Trans. of #Fiziol[ogicheskii] Zh[urnal] SSSR, 1961, v. 47, no. 1, p. 19-29.

DESCRIPTORS: *Autonomic nervous system, Stimulation, *Reaction (Psychology), Thalamus, Nerves, Brain, *Epinephrine, *Chlorpromazine.

Under chloralose-induced sleep in cats, one-sided excitation of the cervical sympathetic nerve changes the nature of the recruiting reaction in the ipsilateral hemisphere. In most cases its amplitude decreases; seldom, usually after the second stimulation, it increases. Adrenalin, when introduced intravenously, in doses of 30-150 γ per 1 kg of weight, induces either a single-phase activity, sharply decreasing the recruiting reaction, or a two-phase reaction, initially reducing the nonspecific response, then increasing and stabilizing it. The intravenous injection of aminasine in the amount of 8-12 mg per 1 kg weight leads to an invariable and significant reduction of the recruiting reaction, till the reaction is extinct; followed by either complete or partial restoration. A second and third administration of aminasine in doses of the same size leads to similar results. The administration of adrenalin or aminasine has little or no effect on the primary responses in the auditory cortex, which are produced by the stimulation of the internal caudal body, or the stimulation of the sympathetic nerve (cervical) from one side. (Author)

Weicker, H., Bachmann, K. D. and others.
THALIDOMIDE EMBRYOPATHY. II. RESULTS OF INDIVIDUAL ANAMNESTIC FINDINGS IN THE AREAS OF THE PEDIATRIC CLINICS OF THE UNIVERSITIES OF BONN, COLOGNE, MUNSTER AND DUSSELDORF (Thalidomid-Embryopathie. II. Ergebnisse Individueller Anamnestischer Erhebungen in den Einzugsgebieten der Universitäts-Kinderkliniken Bonn, Köln, Münster and Düsseldorf). Sep 62, 29p. 5 refs.
Order from SLA $2.60 62-20105

Trans. of D[eu]tsch[e] Med[izinische] W[ochen]schr[ift] (West Germany) 1962, v. 87 [no. 33] p. 1597-1607.

DESCRIPTORS: *Drugs, *Thalidomide, Toxicity, *Congenital anomalies, Germany.

Radiobiology

Chernov, G. A. and Rauschenbach, M. V.
CHANGES IN SEROTONIN CONTENT IN THE BRAIN AND INTESTINES OF GUINEA PIGS AND RATS WITH ACUTE RADIATION SICKNESS. [1962] [11]p. 9 refs.
Order from OTS or SLA $1.60 62-20309

Trans. of #Problemy Gematologii i Perelivaniya Krovi (USSR) 1960, v. 5, no. 9, p. 3-7.

DESCRIPTORS: *Serotonin, *Brain, *Intestines, *Rats, #Radiation sickness, Blood, Metabolism, Laboratory animals, X rays.

Getsel', Kh. A.
AUTORADIOGRAPHY OF THE CEREBELLUM AND THE PONS VAROLII. [1962] [13]p. (refs. omitted) 8 refs.
Order from OTS or SLA $1.60 62-20303

Trans. of Nervnaya Sistema (USSR) 1960, no. 2, p. 44-52.

DESCRIPTORS: *Autoradiography, *Brain, Cerebellum, Nerve cells, *Metabolism, *Phosphorus, Radioactive isotopes

The intensity of metabolism of phosphorus compounds in grey matter of the cerebellum and pons varolii is greater than it is in white matter. Intensity of metabolism of phosphorus compounds in cellular bodies of cerebellar neurons is greater than in dendrites; but less in axons with myelin, than in dendrites. Distribution of P^{32} in the same histological layer may be uneven. Method of administering the radioactive phosphorus does not affect its distribution in the cerebellum. (Author)

Gusev, N. G.
HÖCHSTZULÄSSIGE WERTE FUER IONISIERENDE STRAHLUNGEN, ZUGELASSEN IN DER UDSSR IM JAHRE 1960 (PDU - 1960) (Maximum Safe Values for Ionizing Radiations, Admitted in the U. S. S. R. in 1960 (PDU - 1960)). 10p.
Order from TIB $1.80

Trans. in German of Gigiena Truda i Professional'nye Zabolevaniya (USSR) 1961, v. 5, no. 4, p. 8-14.
Another trans. is available in English from OTS $2.25 in 61-31528, JPRS-9706, 18 July 61, 95p.

DESCRIPTORS: *Ionization, *Radiation effects, U. S. S. R

Zoology

THE TASKS OF THE FISHING INDUSTRY IN 1962 (Zadachi Rybnoi Promyshlennosti na 1962 G) tr. by Milan A. Kravanja. 1 June 62 [2]p.
Order from OTS or SLA $1.10 62-32123

Partial trans. of Rybnoe Khozyaistvo (USSR) 1962, v. 38, no. 1, p. 3-8.

DESCRIPTORS: *Fisheries, Herring, *Fishes, Production, Marine biology.

Bogdanova, E. A.
NATURAL HABITAT OF THE MYXOSPORIDEAN (MYXOSOMA CEREBRALIS - WHIRLING DISEASES) AT SAKHALIN (SOUTHEAST USSR) tr. by Peter M. Rotast. Aug 61 [5]p. 11 refs.
Order from OTS or SLA $1.10 63-15138

Trans. of Akademiya Nauk SSSR. Doklady, 1960, v. 134, no. 6, p. 1501-1503.

DESCRIPTORS: *Parasites, *Protogoa, Fishes, *Salmon, Distribution, Marine biology, Parasitic infections, Diseases, Sakhalin Island.

Mednikov, B. M.
EFFECT OF VARIOUS FOOD ORGANISMS OF FISH GROWTH AND COMPOSITION OF FISHERY COMPLEXES: DIFFERENCES IN BIOLOGICAL CHARACTERISTICS OF FOOD ORGANISMS AS A FACTOR DETERMINING FISH GROWTH AND THE COMPOSITION OF FISHERY COMPLEXES. 5 Apr 63 [34]p. 51 refs. JPRS: 18573.
Order from OTS $1.00 63-21518

Trans. of Voprosy Ikhtiologii (USSR) 1962, no. 2, p. 299-308.

DESCRIPTORS: *Food, *Fishes, Fisheries, Growth, *Plankton, Aquactic animals, Ecology

Morgun, L. G.
FORMING OF COMPLEMENT IN THE PROCESS OF THE ONTOGENETIC DEVELOPMENT OF VERTEBRATES (Formuvannya Komplementu v Protsesi Ontogenetichnogo Rozvitku Khrebetnikh Tvarin). 11 Dec 62, 11p. 10 refs. NIH no. 12-12-62.
Order from OTS or SLA $1.10 63-15162

Trans. of Medychnyi Zhurnal (USSR) 1950, v. 20, no. 4, p. 67-73.

DESCRIPTORS: *Compliment, Animals, Evolution, *Embryology, Genetics, Hemolysis, Blood serum, Age, Man, Rats, Rabbits, Chickens.

The complement formed in the blood serum on a scale of a few units arises very early: in man apparently between the second and third months of intra-uterine development, in guinea pigs in the first half of the embryonic period, in rats and rabbits in the second half, and in chick embryos it begins with the 15th day of incubation. Forming of complement in the process of embryogenesis does not occur at once, but gradually from components that appear sequentially. K^3 is the first to arise, then K^1 and K^4, and lastly K^2. At the time of the emergence of all four components the serum acquires the properties of complement. The consecutive emergence of the separate components in the process of embryogenesis and the gradual increase of their titer indicate that the oldest phylogenetically is K^3 and the youngest K^2.

Morgun, L. G.
THE QUESTION OF COMPLEMENT IN INVERTEBRATES (Do Pitannya pro Komplement u Bezkhrebetnikh Tvarin). 10 Dec 62, 9p. 9 refs. NIH no. 12-11-62.
Order from OTS or SLA $1.10 63-15161

Trans. of Mikrobiologichnyi Zhurnal (USSR) 1949, v. 11, no. 4, p. 43-49.

DESCRIPTORS: *Complement, *Animals, *Physiology, *Evolution, Hemolysis, Blood, Mollusca, Silkworms, Cockroaches, Genetics.

The hemolymph of the species of invertebrates studied has no complement. The capability of the hemolymph of Mytilus (sea mussel with byssus) and Anodonta (fresh-water mussel) to hemolyze erythrocytes of frog is not linked with the presence of complement. The hemolymph of Anodonta (inactivated at 56°C) of "grape" or Roman snails (Helix pomatia), of cockroaches (Periplaneta orientalis), and of the larvae and pupae of oak silkworm (Antheraea pernyi) is capable of replacing the complement of frog at removal of the third component. The capability of the hemolymph to replace the third component of the complement of frog testifies to the similarity of effect of the hemolymph of invertebrates and the third component of the complement of vertebrates in the reaction of hemolysis. (Author)

Morgun, L. G.
THERMOSTABILE COMPONENTS OF COMPLEMENT (C^3 AND C^4) IN DIFFERENT SPECIES OF ANIMALS (Termostabil'ni Komponenti Komplementu (C^3 ta C^4) u Riznikh Vidiv Tvarin). 10 Dec 62, 13p.
NIH no. 12-8-62.
Order from OTS or SLA $1.60 63-15160

Trans. of Mikrobiologichnyi Zhurnal (USSR) [1948] v. 9, no. 2/3, p. 71-79.

DESCRIPTORS: *Complement, *Heat, Stability, *Animals, Blood serum, Evolution, Physiology, Immunity, Hemolysis, Genetics, Mammals, Birds, Reptiles, Biochemical genetics.

Parin, N. V.
OXYPORHAMPHUS MERISTOCYSTIS (PISCES, OXYPORHAMPHIDAE) - A NEW SPECIES OF FLYING HALFBEAK FROM THE WATERS OF THE INDO-MALAYAN ARCHIPELAGO, tr. by Robert D. Jackson. [1962] [6]p. (fig. omitted) 7 refs.
Order from OTS or SLA $1.10 63-15236

Trans. of Voprosy Ikhtiologii (USSR) 1961, no. 3(20) p. 391-394.

DESCRIPTORS: *Taxonomy, *Fishes, *Indian Ocean, Morphology, Anatomy, Pacific Ocean.

Protasov, V. R. and Romanenko, E. V.
SIGNIFICANCE OF CERTAIN FISH SOUNDS. 22 Mar 63 [15]p. (photo. omitted) 11 refs. JPRS: 18303.
Order from OTS $0.50 63-21396

Trans. of Zoologicheskii Zhurnal (USSR) 1962, v. 41, no. 10, p. 1516-1528.

DESCRIPTORS: *Fishes, *Sound, Sound signals, *Underwater sound, Direction finding, Behavior, Perception.

The report is on biohydroacoustics. In it, the sounds made by some fish are described; their signal and biological significance are elucidated, and experiments are described for finding out the capabilities of fish in determining the direction of sources of underwater sounds.

Uspenskii, S. M.
FAUNA OF THE ARCTIC (Fauna Arktika). Nov 62 [16]p. RTS 2173.
Order from OTS or SLA $1.60 63-15277

Trans. of Priroda (USSR) 1961 [v. 50] no. 8, p. 33-41.

DESCRIPTORS: *Arctic regions, Biology, Distribution, *Animals, Aquatic animals, Food, Birds, Mammals, Geography, Atmospheric temperature, Diseases, Parasites, *Ecology.

CHEMISTRY

CHEMICAL ABSTRACTS, 1941, VOL. 4, NO. 4: [SELECTED ABSTRACTS]. [1961] 6p. 1 ref.
Order from OTS or SLA $1.10 61-20789

Trans. from Khimicheskii Referativnyi Zhurnal (USSR) 1941, v. 4, no. 4, p. 7, 15, 17, 30, 79, 100-101, 106-107, 111.

DESCRIPTORS: *Abstracts, Boiling, Temperature, Hydrocarbons, Viscosity, Liquefied gases, Combustion, *Chemistry, Diesel engines, Detonation, Reduction (Chemistry), Acetylenes, Sulfides, Synthesis (Chemistry), Catalysts, Clay, Water, Petroleum, Oils, Recovery, Octanes, Decomposition.

Contents:

Determination of the boiling temperature of hydrocarbon mixtures, by D. D. Zykov
Viscosity of liquefied gases and their mixtures, by S. F. Gerf and G. I. Galkov
Effect of added gases on the process of combustion in diesel engines, by D. N. Vyrubov
Effect of roughness of the surface of a tube on the formation and propagation of detonation in gases, by K. I. Shchelkin
Reduction of binary inorganic mixtures and hydrogenation of binary organic mixtures by hydrogen, by V. V. Ipat'ev
Method of determination in the air of acetylene monovinyl-acetylene and divinylacetylene in the presence of xylene and chlorobenzene, by E. A. Peregud and Z. F. Orlova
Activity of zinc sulfide-copper sulfide catalysts for methanol synthesis, by N. P. Kurin
Comparison of catalytic properties of clays, by B. N. Dashkevich and others
Change of the properties of water under the influence of hydrocarbon oils, by A. I. Iz'yurova
Effect of petroleum oil on the chemical and physical properties of natural water, by B. A. Skopinstsev and I. N. Sosunova
Recovery of spent autotractor oils, by P. P. Dmitriev and N. D. Ryabova
The character of decomposition of mixtures of octane and isooctane, by L. I. Berents.

CHEMICAL ABSTRACTS, 1941, VOL. 4, NO. 5: [SELECTED ABSTRACTS]. [1961] 7p.
Order from OTS or SLA $1.10 61-20788

Trans. from Khimicheskii Referativnyi Zhurnal (USSR) 1941, v. 4, no. 5, p. 8-12, 15, 22-23, 36, 39, 49-50, 70-71, 95-97.

DESCRIPTORS: *Abstracts, Reaction kinetics, Oxidation, Carbon compounds, Monoxides, Synthesis (Chemistry), Aluminum compounds, Bromides, Ultrahigh frequency, Gases, *Chemistry, Hydrocarbons, Hexyl radicals, Ethanes, Chlorides, Ethyl ethers, Propyl ethers, Ethylenes, Bacteria, Oils, Geophysical prospecting, Organic compounds.

Contents:

Investigation of the kinetics of chemical reactions in solutions: effect of the solvent, by S. S. Urazovskii and G. F. Sil'chenko
Kinetics of slow oxidation of carbon monoxide, by A. V. Korneeva and M. V. Polyakov
Selective catalytic oxidation of carbon monoxide in the presence of hydrogen, by N. P. Kurin and G. A. Orman
Mechanism of catalytic synthesis from hydrogen and carbon monoxide, by D. A. Pospekhov
Physico-chemical investigation of solutions of aluminum bromide and its complex compounds in some organic solvents, by E. Ya. Gorenbein
Effect of ultrahigh frequency on some organic compounds, by P. I. Medvedchuk
Heat capacity of flue gases according to spectroscopical data, by S. N. Shorin
Removal of hydrogen halides from polyhalogenated hydrocarbons with liquid ammonia, by G. M. Mkryan
Methods of preparation of hexachloroethane, by G. M. Mkryan and V. O. Babayan
Iodination of aromatic hydrocarbons in the presence of persulfates of ammonium and potassium, by D. M. Marko and Yu. A. Belyaev
Determination of saturated, unsaturated and aromatic hydrocarbons in the air, by A. K. Permyakova-Yakovtsevskaya
Method of determination of chlorine derivatives of organic compounds in the air, by A. K. Permyakova-Yakovtsevskaya
Lamp method of determination of chlorine derivatives of organic compounds in the air, by E. A. Peregud
Determination of dichlorodiethyl and dichlorodiisopropyl ethers in the air, by A. M. Demidova
Determination of vapors of trichloroethylene in the air, by E. I. Kuz'mina
Bacteriological method of oil prospecting, by G. A. Mogilevskii
Solid hydrocarbons from Balakhany light oil, by D. O. Gol'dberg and others
Velocity of cracking of narrow oil fractions and their mixtures, by L. I. Berents
Physico-chemical investigation of some asphalt components, by L. I. Kovaleva.

Horacek, J. and Körbl, J.
DETERMINATION OF CARBON AND HYDROGEN IN ORGANIC COMPOUNDS. I. THE EFFECTIVENESS OF COMBUSTION CATALYSTS IN THE COMBUSTION OF ACETIC ACID. 31 Aug 62, 12p. 18 refs.
Order from SLA $1.60 63-10100

Trans. of Mikrochim[ica] Acta (Austria) 1959 [no. 2] p. 303-313.

DESCRIPTORS: Organic compounds, *Catalysts, *Combustion, Oxidation, *Acetic acids Decomposition, *Silver compounds, *Permanganates, Quantitative analysis, Carbon, Hydrogen

The oxidative catalytic effectiveness under standard conditions was tested for 28 catalysts that are already used as combustion catalysts in elemental analysis or that appear suitable for this purpose. As test compound we used acetic acid, which was mixed in constant quantity with the oxygen stream. For each catalyst we determined the temperature at which acetic acid can no longer be detected in the combustion products, and also the temperature at which oxidation to CO_2 and water is quantitative. Of the materials usable in practice, the decomposition product of $AgMnO_4$ proved the most effective. (Author)

JOURNAL OF GENERAL CHEMISTRY, 1945, VOL. 15, NO. 1/2: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1962] 9p. 19 refs.
Order from OTS or SLA $1.10 62-10853

Abstract trans. of Zhurnal Obshchei Khimii (USSR) 1945, v. 15, no. 1/2, p. 3-36, 42-64, 70-115.
##Complete translations of p. 42-59, 70-74, 86-89 are available from NRCC as TT-415 and TT-368 and from SLA as RT-1418.

DESCRIPTORS: *Chemistry, *Abstracts, Manganese compounds, Dioxides, Sorption, Catalysis, Vapor pressure, Ammonia, Liquids, Halides, Ethanes, Butanes Chemical reactions, Methyl radicals, Hydroxides, Tetralin, Synthesis (Chemistry), Terpenes, Hydrogen, Chemical analysis, Grignard reagents, Acetylenes, Polyvinyl alcohol, Hydrogenation, Alcohols, Benzyl radicals, Dehydration.
Contents:
Sorption and catalytic properties of active manganese dioxide with respect to vapors and gases. IV. Catalytic properties of α, β and γ modifications of manganese dioxide, by E. V. Alekseevskii and K. V. Frid
Vapor pressure of some binary systems, I, by K. A. Dulitskaya
Effect of the third, non volatile component on partial pressures of binary systems, II. by K. A. Dulitskaya
Amination of organic halogen compounds in liquid ammonia. II. Reaction between liquid ammonia and lower alkyl halides, by N. S. Spasokukotskii and others
Synthesis of alkylated tetrahydronaphthalins, by I. A. Soloveva and N. A. Prebrazhenskii
##Camphene rearrangement of the second type, by I. K. Sivkov
Catalytic conversions of terpenes. II. Catalytic conversions of Δ^3-carene over activated clay, by G. A. Rudakov and G. A. Artamonov
##Determination of active hydrogen with a grignard reagent in an atmosphere of carbon dioxide, II, by A. P. Terent'ev and K. D. Shcherbakova
Addition of hydrogen to acetylene compounds. XXXVI. Catalytic hydrogenation of vinyl-acetylenic alcohols, by Yu. S. Zal'kind and T. A. Boroda
Catalytic dehydration of benzyl alcohol, by V. K. Terenin.

Berlin, A. A. and Parini, V. P.
THE SYSTEMATISM OF HIGH-MOLECULAR COMPOUNDS AND FUNDAMENTAL TYPES OF INORGANIC AND ORGANO-ELEMENT POLYMERS. [1962] 18p.
Order from K-H $22.50 K-H 6144

Trans. of Uspekhi Khimii (USSR) 1949, v. 18, no. 5, p. 546-556.

DESCRIPTORS: *Polymers, Classification, Inorganic substances, Organic compounds.

Gal'pern, G. D.
VARIABILITY OF GASES OF SOUTHERN ISHIMBAI. [1962] 2p. 2 refs.
Order from OTS or SLA $1.10 62-16766

[Abstract] trans. of Akademiya Nauk SSSR. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1943, v. 41, no. 5, p. 225-227.

DESCRIPTORS: *Gases, Oils, Hydrocarbons

Office of Technical Serivces, Dept. of Commerce, Washington, D. C.
OZONE. Sep 62, 11p. 156 refs. OTS Selective Bibliography SB-509.
Order from OTS $0.10 OTS SB-509

DESCRIPTORS: *Ozone, Bibliographies, Chemical properties, Chemical reactions, Chemical analysis, Spectroscopy, Catalysis, Ozonides, Radioactivity, Chemical engineering, Biology, Medicine, Public health, Deterioration, Atmosphere, Propellants, Production.

Lists 156 reports and translations added to the OTS catalog during the period 1945 to September 1962. Includes, among other subjects, treatment of the following research and development on ozone and ozonides: physical chemistry of ozone reactions; qualitative and quantitative chemistry of ozone, ozonides and other ozone substances; spectroscopic studies of ozone and ozone compounds; industrial applications; deteriorating effects; biomedical and public health aspects; studies of ozone and its effects on organisms and material in the upper atmosphere; high energy and propellant applications; and industrial production. (Author)

Analytical Chemistry

Aleksandrov, S. N., Smulyakovskii, Ya. E., and Alekseev, S. A.
SPEKTRALANALYTISCHE BESTIMMUNG VON VANADIUM UND NICKEL IN ERDÖLPRODUKTEN. (Spectroscopic Determination of Vanadium and Nickel in Mineral Oil Products). 5p.
Order from TIB $1.20

Trans. in German of Khimiya i Tekhnologiya Toplivi Masel (USSR) 1958 [v. 3] no. 9, p. 69-71.

DESCRIPTORS: *Spectroscopy, Determination, *Vanadium, *Nickel, *Mineral oils.

Anger, V. and Fischer, G.
A NEW SPOT TEST FOR ALDEHYDES. [1962] 7p.
Order from K-H $8.75 K-H 10467

Trans. from Mikrochimi[ca] Acta (Austria) 1960, no. 4.

DESCRIPTORS: *Aldehydes, Chemical analysis.

Asmaev, P. G. and Popova, L. P.
AMOUNT AND COMPOSITION OF THE SOLID-LIQUID PHASE OF TOBACCO SMOKE. [1962] 11p. 15 refs.
Order from OTS or SLA $1.60 63-10684

Trans. of Izv[estiya] Vys[shikh] Ucheb[nykh] Zav[edenii]. Pishch[evaya] Tekh[nologiya] (USSR) 1961, no. 4, p. 51-57.

DESCRIPTORS: *Tobacco, *Smokes, *Phase studies, Solids, Liquid, *Cigarettes, Hydrocarbons, Chemical analysis.

The relation between the amount of the solid-liquid phase of tobacco smoke and the time of burning of the cigarette and the moisture content of tobacco was determined. The amounts of water, higher hydrocarbons, steam volatile oil, alkaloids, non-saponifiable resins, resin acids and other organic acids in the solid-liquid phase of the smoke were determined. The effect of the method of treatment of tobacco on the composition of the solid-liquid phase was elucidated. It is shown that the cellular tissue of tobacco is the principal source of the higher hydrocarbons in the tobacco smoke. (Author)

Bonitz, E. and Huber, W.
DETERMINATION OF PURITY OF ORGANOALUMINUM COMPOUNDS BY RECORDING CONDUCTIVITY TITRATION. [1962] 12p.
Order from K-H $15.00 K-H 12315

Trans. of Z[eitschrift fŭr] Anal[ytische] Chem[ie] (West Germany) 1962, v. 186, p. 206-212.

DESCRIPTORS: *Metalorganic compounds, *Aluminum compounds, *Electrolytic titration, Impurities, Chemical analysis, Electrical conductance.

Breitenbach, J. W. and Forster, E. L.
MOLECULAR WEIGHT DETERMINATIONS WITH POLYVINYL-CHLORIDES. [1962] 20p.
Order from K-H $25.00 K-H 5241

Trans. of Kolloid-Zeitschrift (West Germany) 1952, v. 127, p. 1-7.

DESCRIPTORS: *Polyvinyl chloride, *Molecular weight, Determination, *Chlorides.

Budesinsky, B.
A UNIVERSAL APPARATUS FOR GASOMETRIC MICRODETERMINATIONS. 21 Aug 62 [8]p. 5 refs.
Order from SLA $1.10 62-18998

Trans. of Mikrochim[ica] Acta (Austria) 1961 [no. 5] p. 811-816.

DESCRIPTORS: *Gas analysis, Gases, *Microdetermination.

A universally applicable apparatus for gasometric determinations is proposed, based on mathematically derived construction parameters. Several basic requirements, such as minimum dead space, minimum number of ground joints, good temperature constancy, and independence of the operating procedure of barometric pressure, are satisfied to an outstanding extent by the apparatus specified. Its universal applicability was tested by a series of different determinations. The absolute error does not exceed ±0.5%. (Author)

Castaing, R.
APPLICATION OF ELECTRONIC PROBES TO A METHOD OF PUNCTUAL CHEMICAL ANALYSIS AND CRYSTALLOGRAPHY. [1962] 13p. (figs. omitted).
Order from SLA $1.60 62-18622

Trans. of la Recherche Aéronautique (France) 1951, no. 23, p. 41-50.

DESCRIPTORS: *Electron microscopy, *X-ray spectroscopy, Design, Operation, Electron beams, Electron lenses, *Chemical analysis, *Crystal structure.

The principle and the first application tests of a new method of local chemical analysis are briefly set forth. The experimental apparatus realized at O. N. E. R. A. permits the analysis of a determined region of the order of a micron cubed of a specimen with a precision of about 1%. The same apparatus furnishes, moreover, in certain favorable cases possibilities of local crystallographic analysis. (Author)

Chenikov, V. V. and Tsonev, I. K.
INVESTIGATION OF THE AROMATIC SUBSTANCES OF TOBACCO [1962] 7p. 8 refs.
Order from OTS or SLA $1.10 63-10669

Trans. of Tabak (USSR) 1962, v. 23, no. 3, p. 49-53.

DESCRIPTORS: *Tobacco, *Odors, Smokes, Smell

The aromatic properties of tobacco depend principally on the carbonyl-alcoholic fraction of the benzene extract from tobacco. This fraction probably consists of five high molecular weight substances, insoluble in syrupy phosphoric acid and non-volatile with steam. It is very probable that one of these substances is an aldehyde, three of them are ketones containing the phenanthrene nucleus in their molecules, and one is a high molecular weight monohydric unsaturated primary or secondary alcohol. (Author)

Dërr, W.
THE ORGANIC ACIDS IN VIRGINIA TOBACCO, AND THE DETECTION AND ESTIMATION OF GLYOXALIC ACID AND α-KETOGLUTARIC ACID. [1962] 28p. (figs. omitted) 26 refs.
Order from SLA $2.60 62-20234

Trans. of Tabak-Forschung (West Germany) 1957, v. 21, p. 53-60.

DESCRIPTORS: *Organic acids, *Tobacco, Detection, Glyoxylic acid, Glutaric acids, Quantitative analysis, Dehydration.

It is concluded that the pH value alone does not permit any deduction regarding the content of organic acids. All the organic acids known until now in tobacco are reported in detail, and a description is given of the methods employed for their estimation. Since the acids found in the ether extract are said only to constitute a fraction of the total acids, the most recent methods of estimation were employed, from alkaline extracts, and on exchange columns, and on separating columns with Mallinckrodt gel, when good success was also obtained with exchanger resins produced in Germany. The acid content in Virginia and Oriental tobaccos is in part considerably increased by the preservation, during drying, of appreciable amounts of chlorogenic acid, caffeic acid, and quinic acid, so that the total acid content is often of the same order as in cigar tobaccos. Only the amount of ammonia liberated during drying decides the respective reaction condition of the tobacco and its classification in the acidic or alkaline group.

Ermenko, V. Ya.
SPECTROGRAPHIC DETERMINATION OF MICRO-ELEMENTS IN NATURAL WATERS FOLLOWING THEIR CONCENTRATION BY EXTRACTION (POHL'S METHOD) AND TABLE OF CONTENTS, tr. by Ivan J. Mittin. 1962 [8]p.
Order from OTS or SLA $1.10 62-32150

Trans. of mono. Spektrographicheskoe Opredelenie Mikroelementov v Prirodnykh Vodakh (Spectrographic Determination of Microelements (Heavy Metals) in Natural Waters) Moscow, 1960, p. 32-35.

DESCRIPTORS: *Spectroscopy, *Chemical elements, Microanalysis, Chemical analysis, Hydrogen ion concentration, *Material separation.

Filomeni, M. and Siesto, A. J.
MICROMETHOD FOR THE PHOTOMETRIC DETERMINATION OF PEROXIDES BY MEANS OF THE REACTION WITH LUMINOL (5-AMINO-2,3-DIHYDROPHTHALAZINE DIONE). DETERMINATION OF HYDROGEN PEROXIDE AND ETHYL PEROXIDE. [1962] 4p.
Order from K-H $5.00 K-H 9850

Trans. of Soc[ietà] Ital[iana di] Biol[ogia] Sper[imentale] Boll[ettino] 1951, v. 27, p. 1096-1098.

DESCRIPTORS: *Hydrogen peroxide, *Ethyl radicals, *Peroxides, Spectrographic analysis, Microanalysis, Amines, Pyridines, Ketones.

Fischer, J., Zettler, H., and Doiwa, A.
QUANTITATIVE DETERMINATION OF LITHIUM IN MINERALS AND INTERMEDIATE PRODUCTS. II. FLAME SPECTROMETRIC METHODS. 24 Apr 56 [18]p.
Order from SLA $1.60 62-18960

Trans. of Metallgesellschaft A. G., Frankfurt a.M. TS Rept. no. 2114, rev. ed., 20 Jan 54.

DESCRIPTORS: *Lithium, Quantitative analysis, Minerals, *Flames, *Spectrographic analysis.

Horacek, J., Körbl, J., and Pechanec, V.
DETERMINATION OF CARBON AND HYDROGEN IN ORGANIC COMPOUNDS. II. THE EFFECTIVENESS OF COMBUSTION CATALYSTS IN THE COMBUSTION OF METHANE. 11 Sep 62, 6p. 4 refs.
Order from SLA $1.10 63-10099

Trans. of Mikrochimica Acta (Austria) 1960, p. 294-298.

DESCRIPTORS: Organic compounds, *Catalysts, *Combustion, Oxidation, *Methanes, Quantitative analysis, Hydrogen, Carbon

The oxidative effectiveness of 28 catalysts for elemental analysis was tested under standard conditions. A methane-oxygen mixture (4% by volume) was used as test sample, and the lowest temperature was determined at which the oxidation of CH_4 to CO_2 and water is quantitative. On the basis of the effectiveness found, the catalysts investigated were divided into two groups. The first group contains those catalysts that burn CH_4 quantitatively below 500°C. The second group contains the materials that are incapable of ensuring quantitative oxidation even at 650°C. (Author)

Mulvey, T.
DEVELOPMENT OF X-RAY MICROANALYSIS IN THE ALDERMASTON A. E. I. RESEARCH LABORATORY ACCORDING TO THE CASTAING-GUINIER TECHNIQUE. [1962] 26p. (figs. tables omitted) 22 refs.
Order from SLA $2.60 62-18577

Trans. of Rev[ue] de Métallurgie. Memoires scientifiques (France) 1959, v. 56, no. 2, p. 163-171.

DESCRIPTORS: *Metallography, *Microanalysis, *X-ray spectroscopy, *Electron microscopy, Optical equipment, Electronic equipment, Design, Operation, *Chemical analysis.

X-ray emission spectra allow a direct and simple way of analyzing a material. Castaing and Guinier thought of associating the spectroscopy techniques of X-ray emission to those of the probe to an electronic optical system, thus realizing a method of microanalysis by X-rays. The present memorandum describes some recent developments in this technique in Great Britain. (Author)

Popov, M. A.
ON THE QUALITATIVE DETERMINATION OF VANADIUM, tr. by Stephanie M. Sydoryak. [1962] 4p. 9 refs.
Order from OTS or SLA $1.10 AEC-tr-5250

Trans. of Zavodskaya Laboratoriya (USSR) 1947, v. 13, p. 680-682.

DESCRIPTORS: *Vanadium, Titration, Chemical analysis, Reagents, Aniline, Oxidation, Hydrogen compounds, Peroxides.

Poluektov, N. S. and Nikonova, M. P.
DETERMINATION OF SEVERAL RARE-EARTH ELEMENTS BY FLAME PHOTOMETRY. [1962] 13p.
Order from OTS or SLA $1.60 AEC-tr-5291

Trans. of Ukrainskii Khimicheskii Zhurnal (USSR) 1959, v. 25, p. 217-225.

DESCRIPTORS: *Rare earth elements, Chemical analysis, *Spectrophotometers, Design, Flames, Ammonium compounds, Chlorides, Rare earths.

An electronic self-recording flame spectrophotometer was constructed on the base of a type UM-2 monochromator. The possibility of determining rare earth elements (lanthanum and yttrium) from their radiation in an air-acetylene flame was investigated. It was found to be possible to determine the elements La, Eu, Y and Yb in the total oxides of rare earths and in preparations of various individual earths. It is shown that adding ammonium chloride to the solution increases the intensity of the rare earth element radiation; the probable reason for this property appears to be formation of volatile chlorides of the rare earth elements. A method is worked out for the determination of La, Eu, Yb and Y, based on comparative heights of peak maxima of molecular bands, (La, Y) and atomic lines (Eu, Yb) as obtained from recorded spectra. The method permits the determination of an element with sensitivity of 0.1% to 0.2% (La_2O_3), 0.3% (Eu_2O_3), 0.003% (Yb_2O_3) and 0.03% (Y_2O_3) and relative precision of ±3% to 7%. With a prepared sample solution, the determination may be made in 10 minutes. The upper limit of determination for an element is 10% to 30% of rare earth oxide in the total oxides. (Author)

Puschel, R.
ON THE USE OF METAL-SPECIFIC INDICATORS IN PRECIPITATE TITRATIONS. VII. A NEW RAPID DIRECT METHOD OF DETERMINATION OF MICROGRAM AMOUNTS OF ORTHOPHOSPHATE. Jan 63.
Order from BISI £1 10s BISI-3094

Trans. of Mikrochimica Acta (Austria) 1960, p. 352-356.

DESCRIPTORS: *Phosphates, Salts, Microanalysis, Microchemistry, Chemical precipitation, Volumetric analysis.

Rodriguez, Joaquin Losada.
INDEX OF QUALITY AND AROMATIZATION OF CUBAN TOBACCOS. [1962] [58]p. 20 refs.
Order from SLA $5.60 62-18830

Trans. of I[nstituto] C[ubano de] I[nvestigaciones] T[ecnologicas]. [Serie de Estudios sobre Trabajos de Investigaciones Tecnologicas] 1960, no. 14.

DESCRIPTORS: Chemical analysis, *Tobacco, Cuba, *Odors, *Taste, Smokes, Economics, Quality control.

This study was conducted for the determination and evaluation of the components which contribute to the quality of alkaline cigarettes, expressing this by means of chemical indices, and to the utilization of certain inferior classes of tobacco, by means of blends and modification of its characteristics of smoke, aroma, impact, and taste, by the treatment and aromatization of the tobacco leaf such as it is found in commerce.

Vecera, M., Snobl, D., and Synek, L.
QUANTITATIVE ORGANIC ANALYSIS. XIII. A RAPID METHOD FOR THE MICRODETERMINATION OF CARBON AND HYDROGEN IN ORGANIC COMPOUNDS. 17 Oct 62, 23p. 30 refs.
Order from SLA $2.60 63-10101

Trans. of Mikrochim[ica] Acta (Austria) 1958, no. 1, p. 9-27.

DESCRIPTORS: *Carbon, *Hydrogen, *Organic compounds, *Microanalysis, Statistical analysis, Absorption (Physical), Catalysis, Combustion, Quantitative analysis.

Wahl, R.
DETECTION AND SEPARATION OF TRIOSE-REDUCTONE, MESOXAL DIALDEHYDE, AND HYDROXYPYRUVIC ACID DURING THE DETERMINATION OF SUGAR IN VIRGINIA TOBACCO. [1962] 14p. 8 refs.
Order from SLA $1.60 62-20233

Trans. of Tabak-Forsch[ung] (West Germany) 1957, v. 19, p. 42-45.

DESCRIPTORS: Detection, *Separation, Reduction (Chemistry), *Carbohydrates, *Tobacco, Pyruvic acids, Aldehydes, Spectrographic analysis, *Oxidoreductases.

Triose-reductone and its two oxidation products, mesoxal dialdehyde and hydroxypyruvic acid, have been detected and described as constituents of the reducing agents present in tobacco. They have been identified as the 2, 4-dinitro-phenylhydrazones (osazones) and as the phenylhydrazones. Triose-reductone and its oxidation product mesoxal dialdehyde were also identified by an optical method, by measuring the light absorption in the visible range of the 2, 4-dinitro-phenylhydrazone (osazone) which dissolves in alcoholic sodium hydroxide solution with a blue colour. The maximum light absorption of this colour in the range of visible wave lengths is at a wavelength of 5, 800Å. The phenylhydrazone of mesoxal dialdehyde dissolves in conc. sulphuric acid with a violet colour. The bisphenylhydrazone of hydroxypyruvic acid melts at 202°C and dissolves in conc. sulphuric acid with a grass-green colour. (Author)

Zaidel', A. N., Kaliteevskii, N. I. and others.
SPECTRAL ANALYSIS BY THE VAPORIZATION METHOD. V. ANALYSIS OF PLUTONIUM BY THE VAPORIZATION METHOD IN VACUUM [Spektral'nyi Analiz po Metodu Ispareniya. V. Analiz Plutoniya Metodom Ispareniya v Vakuume] tr. by Sergey Shewchuck. Dec 61, 10p. 9 refs.
Order from OTS or SLA $1.10 UCRL Trans-766(L)

Trans. of Optika i Spektroskopiya (USSR) 1957, v. 3 [no. 1] p. 16-20.

DESCRIPTORS: *Plutonium, *Vaporization, Low pressure research, Oxides, Spectroscopy, Impurities, Chemical analysis, Vacuum apparatus, Thorium, Lanthanum, Uranium.

Inorganic Chemistry

JOURNAL OF INORGANIC CHEMISTRY, 1956, VOL. 1, NO. 7. 1962, 265p. 406 refs. PL-480 AEC
Order from OTS $3.75 AEC-tr-4588

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1956, v. 1, no. 7, p. 1457-[1688].

DESCRIPTORS: *Dolmite, Solubility, *Salts, Thermodynamics, *Fuzed materials, Physical properties, *Chemical bonds, *Minerals, *Fertilizers, *Alloys, *Ultrasonic radiation, *Calcium compounds, *Barium compounds, *Silicon compounds, Oxides, Metals, Melting, *X-ray diffraction analysis, Adsorption, *Iron, Desulfurization, *Carbides, Chemical compounds, Classification, *Rubidium compounds, *Cesium compounds, *Strontium compounds, Nitrates, Fluorides, *Sodium compounds, *Beryllium compounds, *Silicates, *Lithium compounds, *Cadmium compounds, Sulfates, *Potassium compounds, *Tantalum compounds, *Aluminum compounds, *Niobium compounds, Chlorides, *Bromine, Hydrogen compounds, *Iodates, Water, *Radiography, *Isotope separation, *Indium, *Chemistry, Periodicals.

Contents:
Modern theory of the chemical entity and some fundamental laws of chemistry, by B. F. Ormont
The solubility of dolomite in water and solutions of calcium sulfate at various partial pressures of CO_2 by, O. K. Yanat'eva

Thermodynamical studies of salts at high temperatures by N. K. Voskresenskaya

Physical properties of salt melts and the nature of their structure particles, by N. P. Luzhnaya and others

Exchange reactions in melts and the nature of chemical bond, by I. N. Belyaev

The solution rate of minerals as a property of multicomponent salt systems, by M. L. Chepelevetskii and others

Physicochemical basis of a method for making a new kind of chlorine-free concentrated fertilizer, by A. Ya. Zvorykin and, F. M. Perel'man

Influence of ultrasonic vibrations on the course of processes in metallic alloys, by N. T. Gudtsov and M. N. Gavze

Phenomenon of liquation in the ternary system CaO-BaO-SiO_2, by I. A. Bondar

Determination of melting points of certain metals at superhigh pressures, by V. P. Butuzov, and M. G. Gonikberg

X-ray analysis at high and low temperatures, by V. G. Kuznetsov

The nature of molecular interactions in adsorption, by B. V. Il'in

Thermodynamics of the desulfurization of pig iron, by A. M. Samarin, and I. S. Kulikov

Phases of variable composition in the chemistry of carbides, by M. A. Gurevich and others

Definition of the concept of chemical compounds and general classification of chemical compounds, by E. S. Makarov

The theory of daltonides and berthollides, by G. B. Bokii

Contribution to the problem of the synthesis of calcium superoxide CaO_4, by S. Z. Makarov, and N. K. Grigor'eva

Diagrams of phase transformation of binary systems formed by nitrates of rubidium and cesium with nitrates of strontium and barium, by V. E. Plyushchev and others

The "model" systems Rb_2BeF_4-Na_2BeF_4-and Ba_2SiO_4-Ca_2SiO_4, by N. A. Toropov and R. G. Grebenshchikov

Ternary system composed of lithium, sodium, and cadmium sulfates, by E. L. Bakumskaya, and A. G. Bergman

Thermal and X-ray phase analysis of the system K_2BeF_4-K_2SO_4, by M. E. Levina and others

Thermographic methods for studies on molten salts and metals, by I. K. Tovmas'yan

Thermal and tensimetric study of the systems $TaCl_5$-$AlCl_3$NaCl and $NbCl_5$-$AlCl_3$-NaCl, by I. S. Morozov and others

Studies on the miscibility of bromine, hydrobromic acid and water, by M. A. Menkovskii and others

Solubility isotherm of the system $2Na^+, 2K^+ \| CO_3^{2-}$ by L. S. Itkina, and V. F. Kokhova

Solubility studies of the system HF-I_2O_5-H_2O (Isotherm 0°), by N. S. Nikolaev, and Yu. A. Buslaev

Study of the state of radioactive elements in dilute solutions by the radiographic method, by I. E. Starik, and N. I. Alekseenko

Methods for separation of carrier-free isotopes, by N. P. Rudenko

Hydrogen peroxide: book review by I. Ya. Volkind of mono. by W. Schumb and others pub. New York, 1955, 759p.

The actinide elements: book review of mono. ed. by G. T. Seaborg and J. I. Katz, pub. New York, 1954.

Bernard, Jean-Claude and Tridot, Gabrile.
PREPARATION AND STUDY OF SOME ALKALI THIOTUNGSTATES AND THIOMOLYBDATES. Pt 1 of A Contribution to the Study of Alkali Thiotungstates and Thiomolybdates: Identification and Filiation of their Ions in Aqueous Solution. [1962] 13p. (figs. refs. omitted).
Order from SLA $1.60 62-18722

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1961 [no. 4] p. 810-812.

DESCRIPTORS: *Sulfur compounds, *Tungstates, *Molybdates, *Potassium compounds, *Ammonium compounds, *Sodium compounds, Synthesis, Chemical properties, Spectrographic analysis.

Potassium and ammonium thiotungstates and thiomolybdates are prepared by saturating the solutions of corresponding tungstates and molybdates with H_2S. Sodium thiotungstate is prepared by passing H_2S saturated with water vapor over crystallized sodium tungstate. The study of aqueous solutions of these thio-salts was done with the aid of spectrophotometry. (Author)

Bernard, Jean-Claude and Tridot, Gabriel.
SULFURATION OF AQUEOUS SOLUTIONS OF ALKALI TUNGSTATES. Pt. 2 of A Contribution to the Study of Alkali Thiotungstates and Thiomolybdates: Identification and Filiation of their Ions in Aqueous Solution. [1962] 21p. (figs. refs. omitted).
Order from SLA $2.60 62-18721

Trans. of Société Chimique de France. Bulletin, 1961 [no. 4, p. 813-818].

DESCRIPTORS: *Sodium compounds, *Sulfur compounds, *Tungstates, Molybdates, Sulfides, *Sulfuration, Ions, Volumetric analysis, Spectrographic analysis.

Potentiometric and conductometric titrations of sodium tungstate mixtures with sodium sulfide show that hydrosulfuric acid is the only sulfurating agent. A study of hydrogen sulfide gas absorption by tungstate solutions show that the substitution of sulfur for hydrogen takes place in successive stages which are more or less differentiated depending on the experimental conditions. Three thiotungstic ions have been revealed by spectrophotometry. (Author) (See also 62-18722)

Bernard, Jean-Claude and Tridot, Gabriel.
SULFURATION OF AQUEOUS SOLUTIONS OF ALKALI MOLYBDATES. Pt. 3 of A Contribution to the Study of Alkali Thiotungstates and Thiomolybdates: Identification and Filiation of their Ions in Aqueous Solution. [1962] 18p. (figs. formulae omitted) 2 refs.
Order from SLA $1.60 62-18720

Trans. of Société Chimique de France. Bulletin. 1961 [no. 4, p. 818-822].

DESCRIPTORS: *Sodium compounds, *Ammonium compounds, *Sulfur compounds, Tungstates, *Molybdates, Sulfides, *Sulfuration, Ions, Spectrographic analysis, Reaction kinetics.

The thiomolybdic ions differ from thiotungstic ions by their more limited domain: below pH 7 thiomolybdate decomposes into molybdenum trisulfide. In basic environment, the substitution of sulfur for oxygen takes place in three stages and we have revealed three ions: $MoO_2S_2^{--}$, $MoOS_3^{--}$, MoS_4^{--}. The dithiomolybdic ion is formed quantitatively by the action of sodium hydrosulfide on neutral molybdate. The substitution continues with the successive formation of the two other ions, the MoS_4 ion remaining alone at the end of the sulfuration. (Author)
(See also 62-18721)

D'yachkov, V. D.
INTERACTION OF THE SODIUM ALUMINATE AND SILICA SOLUTIONS. 14 Feb 45, 8p. (figs. omitted) 10 refs.
Order from OTS or SLA $1.10 63-10352

Trans. of [Zhurnal Prikladnoi Khimii] (USSR) 1937, v. 10, p. 1211-1215.
Another trans. is available from SLA as R-4960, 8p.

DESCRIPTORS: *Sodium compounds, *Aluminates, Chemical reaction, *Silicon compounds, Colloids, Chemical precipitation, Chemical analysis, Oxides.

Hecht, Horstmar.
THE DEHYDRATION OF METAL-CHLORIDE HYDRATES WITH THIONYL CHLORIDE AND WITH CARBONYL CHLORIDE. 7 Dec 62, 22p. 16 refs.
Order from SLA $2.60 63-10561

Trans. of Zeitschrift für Anorganische Chemie (East Germany) 1961, v. 254, p. 37-51.

DESCRIPTORS: *Dehydration, *Sulfonyl compounds, *Chlorides, *Hydrates, *Phosgene, Thallium compounds, Metallic compounds.

A method is described for the dehydration of hydrates. The method is based on the fact that the hydrate water is converted by reaction with thionyl chloride or carbonyl chloride into gaseous compounds (SO_2 or CO_2 and HCl), which can be separated directly from the anhydrous compounds. The methods are applied to the dehydration of a series of metal chloride hydrates. The preparation and the properties of the addition compound $2\,AlCl_3 \cdot SOCl_2$ are described. The preparation of pure, anhydrous thallium (III) chloride is described. (Author)

Khrushchev, M. S. and Krylov, V. N.
ZUR FRAGE DES MECHANISMUS UND DER KINETIK DER BILDUNG VON 75% FERROSILIZIUM (The Mechanism and the Kinetics of the Formation of 75 percent-Fierrosilicon). 16p.
Order from TIB $2.60

Trans. in German of Zhurnal Prikladnoi Khimii (USSR) 1961, v. 34, no. 4, p. 756-765.

DESCRIPTORS: *Iron compounds, *Silicon compounds.

Organic Chemistry

PHOTOPOLYMERS. [1962] 12p. (figs. omitted).
Order from OTS or SLA $1.60 62-20014

Trans. of Belgian patent 605,315, by Gevaert Photo-Producten N. V.

DESCRIPTORS: *Polymers, *Photochemistry, *Polymerization, Light, Colors, Photosensitivity, Preparation.

The invention concerns a new method for the preparation of polymer compounds by photo-polymerization, and more particularly for the preparation of graft and block mixed polymers. (Author)

PROCESS FOR THE PREPARATION OF HIGH MOLECULAR POLYMERISATION PRODUCTS FROM OLEFINS. [1962] 8p.
Order from OTS or SLA $1.10 62-20444

Trans. of Belgian patent 607,821, 4 Sep 61 (priority of German patent no. Sch 28,436 IVb/39c, 3 Sep 60) by Scholven-Chemie Aktiengesellschaft.

DESCRIPTORS: *Ethylenes, *Polymerization, Molecular weight, Mechanical properties, Polymers, Catalysis.

A process is described for the preparation of high molecular weight polymerization products starting from olefins by means of catalytic contact combinations, which consist of organo-metallic compounds of the first, second and third main groups of the periodic system, and particularly of combinations of the formula $R\,Al\,X_2$, where R is a hydrocarbon radical, and X also a hydrocarbon radical or of hydrogen, halide or even an alkoxy group, aryloxy, secondary amine, mercaptan, thiophenyl, carbonic acid and/or a sulfonic acid group, etc..., and, besides, of combinations of transition metals of the fourth to sixth groups adjacent in the periodic system. (Author)

Andrianov, K. A. and Gornetz, L. V.
SYNTHESIS OF ALKYL (ARYL) ALKOXYSILANES [Sintez Alkil (Aril) Alkoksisilanov]. [1962] 7p.
Order from K-H $8.75 K-H 3626 c

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 101, no. 2, p. 259-261.
Another trans. is available from SLA as RT-3038.

DESCRIPTORS: *Silanes, Alkyl radicals, *Alkoxy radicals, Synthesis.

Belikova, N. A., Berezkin, V. G., and Polak, L. S.
INVESTIGATION OF THE RECOMBINATION PRODUCTS OF ALKYL RADICALS IN LIQUID-PHASE RADIOLYSIS OF n-HEXANE. 2 Nov 62, 17p. 10 refs. FTD-TT-62-1270.
Order from OTS or SLA $1.60 63-15515

Unedited rough draft trans. of Neftekhimiya (USSR) 1961, v. 1, no. 6, p. 828-835.

DESCRIPTORS: *Hexanes, Butenes, *Radiolysis, Recombination reactions, Reaction kinetics, Molecular isomerism, *Decanes, Physical properties.

The fraction C_9-C_{12} of the higher products of the liquid-phase gamma-radiolysis of pure n-hexane and n-hexane with added butylene at +20° and -77° were studied. The isomer composition of the dimer product of the radiolysis of n-hexane were investigated in detail, and certain properties of the various hexyl radicals were explained. The relative steady-state concentrations of hexyl radicals were calculated and it was shown that the constants of the recombination of various hexyl radicals with a straight carbon chain are practically equal in the liquid phase. Four isomers of dodecane were synthesized for the first time and their physical properties were determined. (Author)

Boldreva, I. I., Dolgoplosk, B. A., and Krol, V. A.
REACTIONS OF ORGANOMETAL COMPOUNDS WITH SALTS OF HEAVY METALS. III. REACTIONS OF ORGANOALUMINUM COMPOUNDS WITH TITANIUM HALIDES. 1 Nov 62, 13p. 12 refs.
Order from OTS or SLA $1.60 63-10835

Trans. of Vysokomol[ekulyarnye] Soed[ineniya] (USSR) 1959, v. 1, no. 6, p. 900-906.
Another trans. is available from OTS $1.60 as AD-273 126, Mar 62, 12p.

DESCRIPTORS: Synthesis, *Catalysts, Metalorganic compounds, *Aluminum compounds, *Ethyl radicals, *Titanium compounds, *Halides, *Complex compounds, Catalysis, Polymerization, Sterochemistry, Molecular isomerism.

A study was made of the products of the interaction of the catalyst components used for producing stereospecific polymers (Ti halides and organoaluminum compounds). During the interaction of alkylaluminum halides and $TiCl_4$, the latter was reduced only to the trivalent state. In the case of ethylaluminum dichloride, an equivalent amount of $AlCl_3$ was formed. The violet modification of $TiCl_3$ did not react with alkylaluminum halides, even at 100 degrees. Triethylaluminum partially reduced $TiCl_3$ to $TiCl_2$ under these conditions. A comparison of the data on the reaction rate of $TiCl_4$ and various organoaluminum compounds afforded the conclusion that the reactivity of the latter decreases as shown in the following series: $Al(C_2H_5)_3$ greater than $Al(C_2H_5)_2Cl$ greater than $Al(C_2H_5)Cl_2$. (Author)

Brooke, Alan David and Crocker, Henri Peter.
PROCESS FOR THE PRODUCTION OF ESTERS, PARTICULARLY TERTIARY BUTYL ACETATE. [1962] 14p.
Order from OTS or SLA $1.60 62-20115

Trans. of French patent 1,283,432, file no. 853,614, internat. cl. C 07 c, appl. 23 Feb 61, granted 26 Dec 61, applications filed in Gt. Brit. no. 6,956/1960, 27 Feb 60 and no. 19,555/1960, 2 June 60 (pub. in [Bulletin Officiel de la Propriété Industrielle] (France) 1962, no. 5).

DESCRIPTORS: *Esters, *Butyl radicals, *Acetates, Production, Ethylenes, Butenes, Acetic acids.

The present invention deals with the production of esters from olefins and in particular with the production of tertiary butyl acetate from isobutene and acetic acid. (Author)
of transition metals is described. In particular, there is described in detail the use of the catalyst based on $AlCl(C_2H_5)OC_2H_5$ and vanadyl diacetylacetonate. On the basis of the results a polymerization mechanism of a radical type is proposed. (Author)

Fischer, Franz and Zerve, Carl.
SUITABILITY OF LIGNITE COKE AS ACTIVE CARBON. [1962] 14p.
Order from K-H $17.50 K-H 3411 b

Trans. of Brennstoff-Chemie (West Germany) 1923, v. 4, no. 23, p. 353-357.

DESCRIPTORS: *Activated carbon, *Coke, *Lignite.

Frankevich, E. L. and Yakovlev, B. S.
CONCENTRATION OF IONS ACCUMULATED IN SATURATED HYDROCARBONS UNDER IRRADIATION AT LOW TEMPERATURE. [1963] 1p.
Order from ATS $2.50 ATS-57Q67R

Trans. of #Akad[emiya] Nauk SSSR. Otd[elenie] Khim[icheskikh] Nauk. Izv[estiya] 1962, no. 9, p. 1699.

DESCRIPTORS: *Ions, *Hydrocarbons, Radiation effects, Temperature.

Fridshtein, I. L., Podol'skaya, F. L. and others.
ONE STATE METHOD FOR OBTAINING ISOPRENE FROM ISOPENTANE AND ISOPENTANE-ISOAMYLENE MIXTURES. [1962] 21p.
Order from K-H $26.25 K-H 10424

Trans. of Khim[icheskaya] Promy[shlennost'] (USSR) 1960, no. 2, p. 89-95.
Another trans. is available from ATS $15.75 as ATS-78M46R [1960] 13p.

DESCRIPTORS: *Isoprene, Synthesis, Pentanes, Pentenes, Mixtures.

Giannini, U. and Cesca, S.
POLYMERS OF VINYL CHLORIDE OBTAINED WITH CATALYSTS PREPARED FROM ALUMINUM ALKYLS AND VANADIUM COMPOUNDS. [1962] [26]p. (figs. omitted) 22 refs.
Order from SLA $2.60 62-18673

Trans. of la Chimica e l'Industria (Italy) 1962, v. 44 [no. 4] p. 371-378.
Another trans. is available from CTS(Chem) $16.40 (subsequent copies $2.70/ea) as CTS(Chem)-288, Aug 62, 4100 words.

DESCRIPTORS: *Polyvinyl chloride, *Catalysts, *Metalorganic compounds, *Aluminum compounds, Alkyl radicals, *Vanadium compounds, Acetyl radicals, Acetones, Esters, Polymers

The polymerization of vinyl chloride in the presence of catalysts prepared from aluminum alkyls and compounds and of aluminum of the general formula $Ti_x Al_y Cl_{3m-n}(OR)_n$. Where x = 3 or a multiple of 3, y = 1/3 x at the most, m = x + y, n = 0.1 x to 1x and R alcoyl, cycloalcoyl, aryl or aralcoyl groups. (Author)

Gurevich, G. I. and Neiman, E. Ya.
ELECTROSYNTHESIS OF W-OXYPENTADECANOIC ACID. [1962] 10p.
Order from K-H $12.50 K-H 11911

Trans. of Khim[icheskaya] Promy[shlennost'] (USSR) 1962 [no. 1] p. 41-44.

DESCRIPTORS: *Capric acids, *Fatty acids, Synthesis, *Electrochemistry.

Gustavson, G.
DECOMPOSITION OF HYDROCARBONS OF AMERICAN AND CAUCASIAN PETROLEUM AT LOW TEMPERATURES. [1962] 6p. 1 ref.
Order from OTS or SLA $1.10 63-10346

Trans. of [Zhurnal Obshchei Khimii] (USSR) 1881, v. 13, p. 149ff.

DESCRIPTORS: *Decomposition, *Hydrocarbons, *Petroleum, Temperature, Pyrolysis, Aluminum compounds, Bromides, Chemical reactions.

Henglein, F. A. and Schmulder, P.
POLYACETALS OF THE FORMALDEHYDES WITH METHYLHYDROXYSILANES. [1962] 31p.
Order from K-H $38.75

Trans. of Makromolekulare Chem[ie] (Switzerland) 1954, v. 13 [no. 1] p. 53-70.

DESCRIPTORS: *Polymers, *Acetals, *Formaldehyde, Methyl radicals, Hydroxides, Silanes, Acetal plastics.

Henglein, F. A. and others.
POLYBORYL FORMALS AND POLYBORIC ACID SILYLESTERS. [1962] 15p.
Order from K-H $18.75

Trans. of Makromolekulare Chemie (Switzerland) 1955, v. 15, p. 177-187.

DESCRIPTORS: *Polymers, *Boron compounds, Methylal, *Boric acids, *Silicon compounds, Esters.

Hoffmann, Ernst G.
ADIABATIC CRYOMETRY AND ITS APPLICATION TO ORGANO-ALUMINUM COMPOUNDS. [1962] 29p.
Order from K-H $36.25 K-H 10024 #15

Trans. of [Justus Liebigs] Ann[alen der] Chemie (West Germany) 1960, v. 629 [no. 1/3] p. 104-121.
Another trans. is available from SLA $2.60 as 61-20457 [1961] 29p.

DESCRIPTORS: *Cryogenics, Thermometers, Measurement, *Low temperature research, Freezing, Liquids, Determination, Molecular weight, Aluminum compounds, Metalorganic compounds, Organic solvents, Valence, Chemical equilibrium, Exchange reactions.

Jahrstorfer, Michael, Spaenig, Herman and others.
PROCESS FOR THE POLYMERIZATION OF α-OLEFINS. [1962] [11]p.
Order from OTS or SLA $1.60 62-20445

Trans. of Belgian patent application 605,439, 26 June 61 (priority of German patent application B 58,446, 2 July 60) by Badische Anilin- & Soda-Fabrik AG.

DESCRIPTORS: *Polymerization, *Ethylenes, Catalysts, Metalorganic compounds, Aluminum, Titanium, Alcohols, Polyethylene plastics.

A process is claimed for the production of macromolecular polyolefins by polymerizing α-olefins, characterized in that one uses as polymerization catalyst a mixture constituting on the one hand an organic compound of aluminum and on the other a reaction product of titanium - IV chloride, and of alcohols or of phenols of an alkoxide as an intermediate in the reaction between an alcohol and compound I, as is the case in other Oppenauer oxidation reactions, was proved by demonstrating the formation of benzaldehyde from the oxidation of bis(benzyloxy)dibutyltin in the presence of p-benzoquinone. (Author)

Kami[ya] Yoshio.
FORMATION OF PROPYLENE OXIDE BY GAS PHASE OXIDATION OF PROPYLENE. [Rept. 1 of Studies on Oxidation of Olefins]. [1962] 3p.
Order from SLA $1.10 62-20190

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64 [no. 8] p. 1513-1514.
Other translations are available from ATS $3.00 as ATS-33P62J [1962] 2p. and from SA $15.00 as SA-Code-G570, Oct 62, 3p.

DESCRIPTORS: *Propenes, *Oxides, *Acetaldehyde, Synthesis, Oxidation.

Kargin, V. A. and others.
POLYCONDENSATION OF ACETONE AND OTHER CARBONLY COMPOUNDS. 11 Apr 62 4p. 11 refs.
T. 1378; [DSIR] NLL M. 8843.
Order from OTS or SLA $1.10 62-32818

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 140, no. 1, p. 122-124.

DESCRIPTORS: *Acetones, *Aldehydes, *Condensation reactions, Polymerization, Molecular structure.

Katsumura, Tatsuo.
OPPENAUER OXIDATION OF ALCOHOLS, USING DIBUTYLDIISOPROPOXYTIN. [Rept.] 3 of Studies on Organotkin Compounds. 1962 [9]p. 17 refs.
Order from SLA $1.10 62-18827

Trans. of Nihon Kagaku Zasshi (Japan) 1962, v. 83 [no. 6] p. 729-731.

DESCRIPTORS: *Metalorganic compounds, *Tin compounds, *Alcohols, Benzyl radicals, Furfuryl alcohols, Cholesterol, *Oxidation, Ketones, Alkoxy radicals.

It has been found that primary alcohols such as benzyl alcohol and anisyl alcohol undergo Oppenauer oxidation in the presence of dibutyldiisopropoxytin (I) and p-benzoquinone, forming aldehydes or ketones, and that xanthohydrol undergoes the same reaction in the presence of compound I and cyclohexanone.

[Kern, Werner, Cherdon, H. and others].
POLYOXYMETHYLENES. [1962] 33p.
Order from K-H $41.25 K-H 11308 f

Trans. of Angewandte Chemie (West Germany) 1961, v. 73, no. 6, p. 177-[185].
Other translations are available from ATS $34.75 as ATS-93N51G [1961] 20p. and from SLA $3.60 as 62-10671 [1961] [33]p.

DESCRIPTORS: *Polymers, *Methanes, Hydrates, Acetates, Methyl ethers, Polymerization, Plastics, Molecular weight, Purification, Copolymerization, Deterioration.

For abstract see Technical Translations 7: 615, 1962.

Kolobikhin, V. A., Tyuryaev, I. Ya. and others.
PREPARATION OF 1, 3-BUTADIENE BY OXIDATIVE DEHYDROGENATION OF n-BUTENES. 15 Oct 62, 5p. 2 refs.
Order from OTS or SLA $1.10 63-10095

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1962, v. 144 [no. 5] p. 1053-1055.
Another trans. is available from ATS $5.25 as ATS-77P64R [1962] 3p.

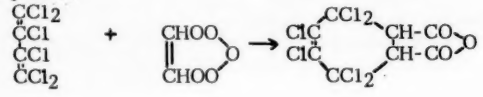
DESCRIPTORS: *Butenes, Oxidation, Dehydrogenation, *Butadienes, Synthesis (Chemistry).

Mamedaliev, Yu. G., Guseinov, M. M., and Treibus, E. M.
SYNTHESIS OF 1, 1, 4, 4, 5, 6-HEXACHLORO-5-CYCLOHEXENE-2, 3-DICARBOXYLIC ACID, tr. by E. D. Weil. 2 Aug 61, 2p. 4 refs.
Order from OTS or SLA $1.10 61-18904

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 134, no. 5, p. 1153-1154.

DESCRIPTORS: *Cyclohexenes, *Carboxylic acids, Synthesis (Chemistry), Chloroprenes, Maleic anhydride, Anhydrides, Chemical reactions.

Experimental conditions are described under which hexachlorobutadiene easily enters into reaction with dienophiles, in particular with maleic anhydride, by the equation



with formation of the anhydride of 1, 1, 4, 4, 5, 6-hexachloro-5-cyclohexene-2, 3-dicarboxylic acid.

Noro, Ken and Takida, Hiroshi.
INVESTIGATION OF THE REDOX SYSTEM. Rept. 1 of Solution Polymerization of Vinyl Acetate with Redox Initiator at Low Temperature. [1962] 14p. 32 refs.
Order from SLA $1.60 63-10084

Trans. of Kobunshi Kagaku (Japan) 1962, v. 19, no. 204, p. 239-244.

DESCRIPTORS: *Vinyl radicals, *Acetates, *Polymerization, *Oxidation-reduction reactions, Catalysts, Reagents, Methanols, Solutions, Vinyl plastics.

Methanol solution polymerization of vinyl acetate (VAc) was conducted at 30°C and at 0°C with respect to redox systems regarded as being effective up to now, redox systems which are expected to be effective, and, for comparison, a number of single initiators which have been claimed to be low-temperature active. The objective was to acquire information regarding redox low-temperature solution polymerization of VAc.

Paushkin, Ya. M., Topchiev, A. V. and others
ACCELERATION AND INHIBITING OF HYDROCARBONS CRACKING IN VARIOUS MEDIA. [1962] 9p. 29 refs.
Order from OTS or SLA $1.10 63-10241

Trans. of #Akad[emiya] Nauk SSSR. Otdel [enie] Khim[icheskikh] Nauk. Izvest[iya] 1961, no. 12, p. 2204-2209.

DESCRIPTORS: *Hydrocarbons, Chemical reactions, Acceleration, Inhibition, *Heptanes, Catalysis.

The pyrolylic conversion of n-heptane in molten metals, such as aluminum, tin, or sodium, occurs selectively, according to the metal. Aluminum and tin accelerate the cracking reaction, while sodium and potassium-hydroxide do strongly inhibit it. Hydroxides of alkali metals can be reduced to the metals through the hydrocarbons. The mechanism of action of the inhibiting additives apparently amounts to a rupture of the chain by the reaction of alkali metals with the free radicals, or by saturation of the latter with hydrogen, evolving during interaction with hydrocarbons. (Author)

Paushkin, Ya. M. and Orlov, Kh. Ya.
ISOMERIZATION OF THE HIGHER n-PARAFFINS C_{15}-C_{18}. [1962] 10p. 15 refs.
Order from OTS or SLA $1.10 63-10227

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1961, no. 4, p. 657-663.

DESCRIPTORS: *Hydrocarbons, *Molecular isomerism, Decomposition, Tungsten compounds, Sulfides, Catalysts, Catalysis, Absorption spectra.

Isomerization of the higher n-paraffins C_{15}-C_{18} was studied on sulfide catalysts. Their conversion to isoparaffins of same composition occurs with a yield of 26% to 35% at the temperature of 380° to 400°C and under a hydrogen pressure of 20 atm on the catalysts

WS_2-NiS-Al_2O_3. Under optimal conditions the cracking products content is at most of 8% to 12%; 56% to 66% of the n-paraffins are unchanged and can be recycled in the reaction. Isomerization of n-paraffins, as shown with the help of spectral investigations, occurs with formation of mono- and dimethyl substituted compounds: the freezing temperature of the starting n-paraffins is of 18° to 27°, while that of the isoparaffins produced after isomerization, is of -42° to -52°C. (Author)

Pel'kis, P. S.
THE TAUTOMERISM OF 1,5-DIPHENYLTHIOCARBAZONE (DITHIZONE). 12 July 62 [8]p. 16 refs.
Order from OTS or SLA $1.10 62-18970

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1953, v. 88 [no. 6] p. 999-1002.

DESCRIPTORS: Reagents, *Dithizone, Ketones, Thiols, *Molecular isomerism, Spectrographic analysis, Absorption spectra

Petrov, G. S., Danilovich, A. I., and Rabinovich, A. Ya.
CATALYTIC OXIDATION OF PETROLEUM OILS. [1962] 8p. 5 refs.
Order from OTS or SLA $1.10 61-18141

Trans. of Khimicheskii Institut imeni L. Ya. Karpova. [Trudy] (USSR) 1926, no. 5, p. 81-89.

DESCRIPTORS: *Petroleum, Mineral oils, *Oxidation, Catalysis, Alkylation, Lead, Iron, Zinc, Acids, Sulfuric acid, Cobalt catalysts.

Experiments of oxidation of vaseline oil and solar oil in the presence of various catalysts are compared with several non-catalytic experiments. Lead brought about a more vigorous oxidation than iron or zinc at temperatures above 250°. Solar oil is much more stable toward oxidation than vaseline oil and this is explained by the presence in the former of resinous substances acting as antioxidants, which are removed by the sulfuric acid treating in the course of the preparation of vaseline oil. However, extensive treatment of vaseline oil with sulfuric acid prevents oxidation. At low temperatures, in the neighborhood of 100°, cobalt naphthenate is thought to be a suitable oxidation catalyst. The amount of acids isolated with alkali is much below that expected from the saponification number. No detailed study of the chemical nature of the acids obtained was carried out, but their contents of hydroxy acids may have been considerable. Utilization of these acids is discussed for the preparation of varnishes and sulfonated emulsifying agents.

Radchenko, O. A.
UEBER EINEN NEUEN PARAMETER DER GENETISCHEN ERDÖL-KLASSIFIZIERUNG (On a New Parameter of the Genetic Classification of Mineral Oil). 7p.
Order from TIB $1.45

Trans. in German of Akademiya Nauk SSSR. Doklady, 1961, v. 138 [no. 5] p. 1234-1237.

DESCRIPTORS: *Genetics, *Mineral oils, Classification.

Shostakovskii, M. F. and Gracheva, E. P.
INVESTIGATIONS OF THE POLYMERIZATION OF α-METHYLVINYL ALKYL ETHERS. III. POLYMERIZATION OF α-METHYLVINYL PROPYL AND BUTYL ETHERS. [1962] [6]p. 7 refs.
Order from OTS or SLA $1.10 62-20156

Trans. of #Zh[urnal] Obshchei Khim[ii] (USSR) 1956, v. 26 [no. 6] p. 1679-1682.

DESCRIPTORS: *Polymerization, Methyl radicals, Butyl radicals, *Ethers, Propyl ethers, *Vinyl radicals, Synthesis, Catalysts, Chemical reactions, Copolymerization.

Conditions were found for the polymerization of α-methylvinyl propyl and butyl ethers with $FeCl_3$ and BF_3 as catalysts in dioxane or alcohol solution. The polymers obtained were characterized. It is shown that polymerization of α-methylvinyl butyl ether does not occur in the presence of radical catalysts (2, 2'-bisazonitrile isobutyric acid. Copolymerization of α-methylvinyl butyl ether with vinyl butyl ether under the influence of ionic catalysts, $FeCl_3$ and BF_3 in dioxane or alcohol solution, did not occur. The increased ionic reactivity of α-vinyl alkyl ethers was shown. (Author)

Shuikin, N. I. and Naryshkina, T. I.
DEHYDROGENATION OF PENTA- AND HEXAMEMBER CYCLANES IN THE PRESENCE OF ACTIVE CARBON. [1962] 4p. 11 refs.
Order from OTS or SLA $1.10 62-20392

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 136 [no. 4] p. 849-851.

DESCRIPTORS: *Cyclohexanes, *Cyclopentanes, *Methyl radicals, Dehydrogenation, *Carbon, Catalysis, Catalysts.

Spaskii, S. S. and Karas, L. Ya.
ZUM PROBLEM DER INDIVIDUELLEN QUANTITATIVEN AKTIVITATSCHARAKTERISTIK UNGESATTIGTER VERBINDUNGEN BEI DEN KOPOLYMERISATIONS-REAKTIONEN (The Individual and Quantitative Characteristic of the Activity of Unsaturated Compounds During Copolymerization Reactions). 22p.
Order from TIB $3.35

Trans. in German of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 4 [p. 505-514].

DESCRIPTORS: *Copolymerization, Chemical reactions, Organic compounds.

Spirin, Yu. L., Gantmakher, A. R., and Medvedev, S. S.
ELECTRONIC ABSORPTION SPECTRA OF CARBANIONS IN THE POLYMERIZATION OF STYRENE WITH ORGANOMETALLIC COMPOUNDS. [1961] [3]p. 6 refs.
Order from OTS or SLA $1.10 62-10439

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1960 [v. 2] no. 2, p. 310-312.

DESCRIPTORS: Styrenes, Polymerization, *Styrene plastics, Metalorganic compounds, Catalysts, Catalysis, *Carbon, *Ions, *Absorption spectrum, Electrons.

In connection with the observed correlation between the structure of the polymer chain and the nature of the alkaline metal catalyst and the medium a study has been made of the electronic absorption spectra of polystyrene carbanions, containing various cationic components. The transition from organolithium to sodium compounds causes a shift in the absorption maximum in the direction of longer wavelengths. The nature of the solvent does not affect the position of the maximum, but affects the intensity of absorption in that region. (Author)

Vinitskii, L. L., Babitskii, B. L. and others.
REAKTION DER AETHANOLAMINE MIT SCHWEFEL (Reaction of the Ethanolamines with Sulfur). 9p.
Order from TIB $1.70

Trans. of [Gosudarstvennyi Nauchno-]Issledovatel'skii Institut Khimicheskoi Promyshlennost [Trudy] (USSR) 1958, no. 7, p. 61-67.

DESCRIPTORS: *Chemical reactions, *Ethanols, *Amines, *Sulfur.

Wallenberger, F. T.
THE STRUCTURE OF ANGULAR POLYCYCLOISOPRENE. [1962] 4p. 13 refs.
Order from SLA $1.10 62-18541

Trans. of Monatshefte für Chemie (Austria) 1962, v. 93 [no. 1] p. 74-77.

DESCRIPTORS: *Isoprene, Molecular structure, Chemical analysis, *Polycyclic compounds.

The first chemical structure proof for the cyclization product of cis-1,4 and trans-1,4-polyisoprene is proposed. (Author)

Physical Chemistry

THE ELECTRIC CONDUCTIVITY OF THE FUSED SYSTEM. [1962] 18p.
Order from K-H $22.50 K-H 3789

Trans. of Tekhnol[ogicheskii] Inst[itut] im[eni] Leningrad[skogo] Soveta. Trudy (USSR) 1946, v. 12, p. 152-164.

DESCRIPTORS: *Fuzed materials, *Electrical conductance.

Aleksandrov, A. P. and Lazurkin, Yu. S.
SOFTENING TEMPERATURE OF POLYMERS. [1962] 3p. 3 refs.
Order from OTS or SLA $1.10 62-16763

Abstract of Akademiya Nauk SSSR. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1944, v. 43, no. 9, p. 376-379 (pub. in English).

DESCRIPTORS: *Polymers, Molecular structure, Chemical bonds, Styrenes, Acrylic resins, Temperature.

Andrianov, K. A., Ganina, T. N., and Sokolov, N. N.
SYNTHESIS OF POLYFERROORGANOSILOXANES AND POLYFERROALUMOORGANOSILOXANES (Sintez Poliferroorganosiloksanov i Poliferro-alyumoorganosiloksanov) tr. by A. Pingell. 27 Nov 62, 9p. 1 ref. NRL trans. no. 920.
Order from OTS $0.50 63-11554

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1962, v. 4, no. 5, p. 678-682.

DESCRIPTORS: *Silicones, *Silicon compounds, *Aluminum compounds, *Iron compounds, *Polymers, Metalorganic compounds, Synthesis, Solubility, Exchange reactions.

Methods for the synthesis of polyphenylferrosiloxanes and polyphenylalumoferrosiloxanes are described and a number of properties of these polymers are investigated. These compounds are soluble in non-polar and weakly polar solvents and do not melt at temperatures up to 500°. Polyphenylferrosiloxanes are highly thermostable and of low volatility at temperatures 200 to 320°. (Author)

Antipin, L. N. and Dudyrev, V. K.
THE BEHAVIOR OF THE CARBON ANODE IN THE ELECTROLYSIS OF CRYOLITE-ALUMINA MELTS. [1962] 10p.
Order from K-H $12.50 K-H 8024 d

Trans. of Zhurnal Fiz[icheskoi] Khim[ii] (USSR) 1957, v. 31, [no. 9] p. 2032-2035.

DESCRIPTORS: *Cryolite, *Aluminum compounds, Oxides, Fuzed materials, Electrolysis, *Electrochemistry, *Anodes (Electrolytic cell), Carbon.

Antipin, L. N. and Tyurin, N. G.
THE DEPENDENCE OF THE POTENTIAL OF A CARBON REFERENCE ELECTRODE ON THE OXYGEN CONTENT OF MOLTEN CRYOLITE. [1962] 5p. 8 refs.
Order from OTS or SLA $1.10 62-32125

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1958, v. 32 [no. 3] p. 640-643.

DESCRIPTORS: *Cryolite, Melting, *Oxygen, Electrodes, *Carbon, Electric potential.

Two independent methods were used in establishing the complicated dependence of the potential of a carbon electrode upon the alumina content of cryolite, and it was found that metal dissolved in the electrolyte affects the potential. The interelectrode resistance in the system $C|Na_3AlF_6 + n\%Al_2O_3|C$ is a maximum at an Al_2O_3 content of 1%. Its changes are negligible in the range of 2 - 10% Al_2O_3. (Author)

Arbuzov, B. A. and Kuznetsov, E. V.
PRODUCTS OF ADDITION OF DIENES TO TOLUENE. [1962] 4p. 7 refs.
Order from OTS or SLA $1.10 62-16772

Abstract of Akademiya Nauk SSSR. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1943, v. 39, no. 8, p. 343-346 (pub. in English).

DESCRIPTORS: *Toluene, *Butadienes, Sodium, Complex compounds, Diene syntheses, Chemical reactions.

Audubert, Rene; Pirosky, Rosa R. de, and Damianovich, Horacio.
THE CHEMISTRY OF HELIUM AND OF THE HELIONOIDS: EMISSION OF ULTRAVIOLET RADIATION IN THE PROCESS OF THERMAL DECOMPOSITION OF HELIUM-PLATINUM COMPOUNDS. 14 Nov 60, 3p.
Order from SLA $1.10 63-10119

Trans. of Asoc[iacion] Quim[ica] Argentina. Anales, 1939, v. 27, p. 127-129.

DESCRIPTORS: *Helium, *Platinum compounds, Radiation chemistry, Chemical reactions, *Pyrolysis, Thermal radiation.

There is emission of ultraviolet radiations during the thermal decomposition of the helium-platinum compound. The emission of radiations is produced at the temperature of maximum thermal decomposition and of increase in density of the more stable helium-platinum. These experiments constitute a new confirmation of the chemical action of helium on platinum. (Author)

Belyaev, A. F. and Maznev, S. F.
ABHANGIGKEIT DER VERBRENNUNGSGESCHWINDIGKEIT VON SCHWARZPULVER VOM DRUCK (The Rate of Burning of Smoke-forming Powder, as Dependent on Pressure). 5p.
Order from TIB $1.20

Trans. in German of Akademiya Nauk SSSR. Doklady, 1960, v. 131, no. 4, p. 887-889.

DESCRIPTORS: *Velocity, *Combustion, *Powders

Belova, V. I. and Patuskova, N. N.
MAGNETIC STUDY OF DOUBLE SALTS Me^1 H1. $ZnSO_4$. [1962] 11p.
Order from K-H $13.65 K-H 5866 d

Trans. of [Akademiya Nauk SSSR]. Sektor Fiz[iko]-Khim[icheskogo] Analiza. Izvestiya, 1955, v. 26, p. 132-137.

DESCRIPTORS: Salts, Metals, *Zinc compounds, *Sulfates, Magnetic properties.

Bergman, A. G. and Bukhalove, G. A.
THERMOCHEMICAL INTERRELATIONS IN TERNARY RECIPROCAL SYSTEMS WITH COMPLEX FORMATION. [1962] 40p.
Order from K-H $50.00 K-H 5035 a

Trans. of [Akademiya Nauk SSSR]. Sektor Fiziko-Khimicheskogo Analiza. Izvestiya, 1952, v. 21, p. 228-249.

DESCRIPTORS: *Thermochemistry, *Complex compounds.

Borodko, Yu. G. and Syrkin, Ya. K.
TEMPERATUR- UND KONZENTRATIONSABHÄNGIGKEIT DER FREQUENZLAGE UND INTENSITÄT VON STREULINIEN DER GEMISCHE VON KETONEN UND CHLOROFORM (The Dependence of the Frequencies and Intensities of the Raman-spectrum-lines of Ketone-chloroform Mixtures upon Temperature and Concentration).
Order from TIB $0.85

Trans. in German of Akademiya Nauk SSSR. Doklady, 1960, v. 131, no. 4, p. 868.

DESCRIPTORS: Frequency, Intensity, *Raman spectroscopy, *Ketones, *Chloroform.

Bystrov, D. S. and Filimonov, V. N.
ANDERUNG DER UR-ABSORPTIONSSPEKTREN VERSCHIEDENER ESTER INFOLGE DES ZUSATZES VON $TiCl_4$, $SnCl_4$, $AlCl_3$ und $AlBr_3$ (Change of Infrared Absorption Spectra of Some Compound Ethers in Response to Addition of $TiCl_4$, $SnCl_4$, $AlCl_3$ and $AlBr_3$)
Order from TIB $1.80

Trans. in German of Akademiya Nauk SSSR. Doklady, 1960, v. 131, no. 2, p. 338-341.

DESCRIPTORS: *Absorption, *Infrared spectroscopy, Ethers, Titanium compounds, Chlorides, Aluminum compounds, Bromides, Tin compounds.

Chapek, M. V.
SOIL SCIENCE AND THE SCIENCE OF COLLOIDS. [1962] 5p.
Order from OTS or SLA $1.10 63-10064

Trans. of Pochvovedenie (USSR) 1939, no. 2, p. 81-82.

DESCRIPTORS: *Soils, *Colloids, Molecular structure.

Damianovich, Horacio.
ACTION OF HELIUM ON PLATINUM. 1 July 60, 4p. 2 refs.
Order from SLA $1.10 63-10382

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1929, v. 188, p. 790-792 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Helium, *Platinum, Absorption, Electrodes, Physical properties, Decomposition, *Electrochemistry

Damianovich, Horacio.
THE CHEMISTRY OF HELIUM AND ANALOGOUS ELEMENTS. I. THE ACTION OF MERCURY ON PLATINUM-HELIUM COMPOUNDS. 31 Oct 60 [1]p.
Order from SLA $1.10 63-10345

Trans. of Asoc[iacion] Quim[ica] Argentina. Anales, 1936, v. 24, p. 147.

DESCRIPTORS: Chemical analysis, *Mercury, *Helium, *Platinum compounds, Decomposition, Stability.

Damianovich, Horacio.
[THE CHEMISTRY OF HELIUM AND HELIUM COMPOUNDS]: COMBINATION OF HELIUM WITH URANIUM BY CHEMICAL-CATHODIC ACTIVATION AND THERMAL DECOMPOSITION OF THE COMPLEX FORMED. [1962] 7p. 3 refs.
Order from SLA $1.10 63-10347

Trans. of Asoc[iacion] Quim[ica] Argentina. Anales, 1939, v. 27, p. 64-73.
Another trans. is available from SLA mi$1.80, ph$1.80 as 59-17347, AERE Lib/Trans-526, Apr 55 [7]p.

DESCRIPTORS: *Helium, *Uranium, *Electrolysis, *Pyrolysis, Oxidation, Complex compounds, Heat of activation, Chemical reactions.

By chemical-cathodic activation uranium fixes helium in proportions which vary from 6 to 9 cubic millimeters per milligram. The decomposition of the helium-uranium complex is endothermic, since it increases with the temperature. The elimination curve of helium as a function of temperature shows a maximum between 60 and 80°C. The helium-uranium complex is less stable than the complexes which helium forms with platinum, iron, and palladium. These facts permit explanation of the non-radioactive origin of the portion of helium contained in minerals and in gas-permeated waters. (Author)

Damianovich, Horacio and Piazza, J.
INERTIA AND CHEMICAL ACTIVITY OF THE RARE GASES: DENSITY AND THERMAL DECOMPOSITION OF THE SYSTEM PALLADIUM-HELIUM. 28 Oct 60 [1]p.
Order from SLA $1.10 63-10348

Trans. of Asoc[iacion] Quim[ica] Argentina. Anales, 1936, v. 24, p. 142.

DESCRIPTORS: *Palladium, *Helium, *Palladium compounds, *Pyrolysis, Density, Inertia. Helium group gases, Electric discharges, Inertia.

Damianovich, Horacio.
INERTIA AND CHEMICAL ACTIVITY OF THE RARE GASES: ACTION OF HELIUM ON IRON UNDER THE INFLUENCE OF ELECTRIC DISCHARGE AT LOW PRESSURE. 28 Oct 60 [1]p.
Order from SLA $1.10 63-10343

Trans. of Asoc[iacion] Quim[ica] Argentina. Anales, 1936, v. 24, p. 141.

DESCRIPTORS: *Helium, *Iron, *Electric discharges, Physical properties, Pyrolysis. Helium group gases, Pressure, Inertia.

Damianovich, Horacio.
[INERTIA] AND CHEMICAL ACTIVITY OF THE RARE GASES: THE ACTION OF HELIUM ON SODIUM UNDER THE INFLUENCE OF ELECTRIC DISCHARGE AT LOW PRESSURE. 27 Sep 60, 4p. 2 refs.
Order from SLA $1.10 63-10339

Trans. of Asoc[iacion] Quim[ica] Argentina. Anales, 1938, v. 26, p. 249-253.

DESCRIPTORS: *Helium, *Sodium, *Electric discharges, Electrolysis, Physical properties. Helium group gases, Pressure, Inertia.

By the action of helium on sodium under the influence of electric discharges at low pressures, a product is formed which is deposited on the walls of the tube next to the cathode and on the surface of the sodium connected to the cathode. The formation of this product takes place with diminution of pressure. The helium fixed by the sodium is not removed employing high vacuum, and is totally dislodged only if the product is heated to volatilization or the metallic block at the cathode is heated to boiling. (Author)

Damianovich, H[oracio] and Trillat, J. J.
INVESTIGATIONS ON THE ACTION OF HELIUM ON PLATINUM. 6 July 60, 2p. 1 ref.
Order from SLA $1.10 63-10379

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1929, v. 188, p. 991-992 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Helium, *Platinum, Radiation chemistry, Chemical analysis, Electric discharges.

Damianovich, Horacio.
INVESTIGATIONS ON THE CHEMICAL INERTIA OF THE RARE GASES. I. ACTION OF HELIUM ON PLATINUM. 30 Nov 60, 9p. 11 refs.
Order from SLA $1.10 63-10381

Trans. of Soc[iedad] Espan̈[ola de] Fis[ica y] Quim[ica] (Spain) 1928, v. 26, p. 365-371.

DESCRIPTORS: Inertia, Helium group gases, *Helium, *Platinum, Chemical analysis, Molecular structure.

A product obtained by the action of helium on platinum, under the influence of a moderate electric discharge at low pressure, has properties clearly distinct from those of the metal itself and retains the helium in considerable amount and in a fairly stable form, probably in a state of absorption compounds or mixtures of these with definite compounds and excess of the metal resulting from decomposition of the complex. (Author)

Delimarskii, Yu. K., Berenblyum, L. S., and Sheiko, I. N.
DECOMPOSITION POTENTIALS OF METAL CHLORIDES IN THE FUSED SYSTEM $AlCl_3$-NaCl. [1962] 13p.
Order from K-H $16.25 K-H 3763 e

Trans. of Ukrain[skii] Khim[icheskii] Zhur[nal] (USSR) 1950, v. 16, p. 254-263.

DESCRIPTORS: Metals, *Aluminum compounds, *Sodium compounds, *Chlorides, Fuzed materials, Decomposition.

Delimarskii, Yu. K. and Khaimovich, R. S.
THE DETERMINATION OF ELECTRODE POTENTIALS OF METALS IN MOLTEN BROMIDES WITH THE AID OF GLASS-SODIUM ELECTRODES. [1962] 18p.
Order from K-H $22.50 K-H 3485 c

Trans. of Ukrain[skii] Khim[icheskii] Zhur[nal] (USSR) 1949, v. 15, p. 351-361.

DESCRIPTORS: *Fuzed materials, *Bromides, Metals, *Electrodes, *Glass electrodes, Sodium, Electric potential, Determination.

Delimarskii, Yu. K.
EQUILIBRIUM BETWEEN SOME MOLTEN METALS AND THEIR BROMIDES IN ALUMINUM BROMIDE-POTASSIUM BROMIDE AS SOLVENT. [1962] 21p.
Order from K-H $26.25 K-H 5866 g

Trans. of Zhurnal Obshchei Khimii (USSR) 1941, v. 11, no. 13/14, p. 1081-1091.

DESCRIPTORS: *Liquid metals, *Aluminum compounds, *Potassium compounds, *Bromides, Chemical equilibrium.

Delimarskii, Y. K.
MOLTEN ELECTROLYTES. [1962] 38p.
Order from K-H $57.50 K-H 3737 e

Trans. of Raboty[po] Khim[ii] Rastvorov i Kompleksn-[ykh] Soedin[enii] (USSR) 1954, p. 29-49.
Another trans. is available from OTS or SLA $1.60 as 61-23652 [1961] [18]p.

DESCRIPTORS: *Electrolytes, Melting, Metals, *Electrochemistry, *Salts, Electrodes, Ions, Deformation, Fuzed materials.

For abstract see Technical Translations 7: 881, 1962.

Efimov, E. A., Erusalimchik, I. G., and Sokolova, G. P.
STATE OF THE SURFACE OF ANODICALLY POLARIZED SILICON IN HYDROFLUORIC ACID SOLUTIONS. [1962] 6p. 2 refs.
Order from OTS or SLA $1.10 63-10766

Trans. of #Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1962, v. 36, p. 1219-[1221].

DESCRIPTORS: Surface properties, *Polarization, *Silicon, Inorganic acids, Capacitance, Electrolysis, Atomic energy levels, Electric potential, Oxides, Hydrogen compounds, Fluorides.

The state of the surface of anodically polarized silicon in 2.5N HF is investigated by charge curves and capacity measurements in the range 10^{-5} - 10^{-2} a cm^{-2}. Oxides are formed during the anodic dissolution of silicon for $\phi \simeq 0.2$v and 0.3 - 0.4v. These compounds differ from each other in structure and they have different values of hydrogen overvoltage. (Author)

Finbak, C.
THE FUSION PROCESS. II. THE MOLAR FUSION ENTROPY OF INORGANIC SALTS. [1962] 6p.
Order from K-H $7.50 K-H 3980

Trans. of Tids[skrift for] Kjemi, Bergvesen [og] Met[allurgi] (Norway) 1942, no. 2, p. 67-68.

DESCRIPTORS: *Fuzed materials, *Salts, *Inorganic substances, Entropy.

Gagnaux, P., Janjic, D., and Susz, B. P.
ADDITION COMPOUNDS OF LEWIS ACIDS. VIII. INFRARED ABSORPTION SPECTRA OF ADDITION COMPOUNDS OF ALUMINUM BROMIDE WITH NITROMETHANE AND PARA-SUBSTITUTED AROMATIC NITRO DERIVATIVES. 9 Dec 60, 18p. 18 refs.
Order from SLA $1.60 63-10558

Trans. of Helvetica Chimica Acta (Switzerland) 1958, v. 41, p. 1322-1332.

DESCRIPTORS: *Complex compounds, Acids, *Spectra (Infrared), *Aluminum compounds, *Bromides, *Nitrogen compounds.

Hollo, J., Laszlo, E. and others.
COMPARISON OF IODINE SORPTION TEST METHODS. Pt. 8 of Contribution to the Chemistry of Starch Fractions. [1962] 10p. (figs. omitted) 26 refs.
Order from SLA $1.10 62-18761

Trans. of die Stärke (West Germany) 1960, v. 12, no. 12, p. 351-358.

DESCRIPTORS: *Iodine, Test methods, Starches, Chemical analysis, Colorimetric analysis, *Volumetric analysis, *Sorption

Ichiba, S.
DAS VERHALTEN VON SPALTEDELGASEN BEI ÄNDERUNG DER FESTEN PHASE. OXYDATION UND REDUKTION VON URANOXYDEN (The Behavior of Cleavage Rare Gases when Changing the Solid Phase). 14p.
Order from TIB $2.35

Trans. in German of Nihon Genshiryoku Gakkaishi (Japan) 1961, v. 3, no. 9, p. 705-710.
Another trans. is available in English from NRCC as NRCC C-4127, Aug 62 [10]p.

DESCRIPTORS: *Rare gases, *Phase transition, *Uranium compounds, Oxides, Oxidation, Reduction.

Izidinov, S. O., Borisova, T. I., and Veselovskii, V. I.
THE ELECTROCHEMICAL AND PHOTOELECTROCHEMICAL BEHAVIOR OF THE SILICON ELECTRODE IN ACID AND ALKALINE SOLUTIONS. [1962] 13p. 13 refs.
Order from OTS or SLA $1.60 63-10672

Trans. of #Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1962, v. 36, p. 1246-1254.

DESCRIPTORS: *Electrochemistry, *Electrodes, *Silicon, *Photochemistry, Acids, Hydroxides, Polarization, Cathodes, Anodes, Electric potential, Surface properties, Photoengraving, Photoelectric effect

The cathodic half reaction of hydrogen evolution in the self-dissolution of silicon proceeds with participation of valence band electrons liberated in the anodic half-reaction. The concentration of conduction electrons extensively changes the magnitude of the potential across the space charge layer but does not affect the rate of self-dissolution. The self-dissolution rate is constant over a wide interval of cathodic potentials. Passivation of the actively etched silicon-alkali system is possible with currents two orders of magnitude smaller than the current of self-dissolution. Passivation occurs at lower currents in light than in the dark. The electrochemical and photoelectrochemical properties of silicon depend both on surface treatment and solution composition. Variation of the photoeffect with time during etching of ground specimens can serve as a check on the state of the surface. (Author)

Kogan, V. B.
METHOD OF CONTROL AND PREDICTION OF THE DATA ON PHASE-EQUILIBRIUM IN POLYCOMPONENTS SYSTEMS, I [Metod Proverki i Predskazaniya Dannykh o Fazovom Ravnovesii v Mnogokomponentnykh Sistemakh, I]. [1962] 10p. 26 refs.
Order from OTS or SLA $1.10 63-10235

Trans. of Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1958, v. 32 [no. 5] p. 1095-1102.
Other translations are available from LC or SLA mi$2.40, ph$3.30 as 60-17730, TVA-3826, 18 Sep 59, 11p. and in French from OTS or SLA $2.60 as 61-15771 CEA-tr-R543, 17 Oct 60 [21]p.

DESCRIPTORS: *Chemical equilibrium, *Activity coefficient, Liquids, Vapors, Control, Mathematical analysis.

For abstract see Technical Translations 4: 144, 1960.

Koutetzkii, Ya.
REMARKS ON THE CHEMICAL ADSORPTION THEORY OF F. F. VOL'KENSHTEIN [Primechaniya k Teorii Khimicheskoi Adsorbtsii F. F. Vol'kenshteina]. [1961] 5p. 6 refs. MDF K 141.
Order from OTS or SLA $1.10 62-23101

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 101, no. 1, p. 119-122.

DESCRIPTORS: *Chemisorption, Theory, Crystals, Lattices, Chemical bonds, Atomic orbitals, *Adsorption.

Marina, L. I., Nashel'skii, A. Ya., and Yakobson, S. V.
INVESTIGATION OF THE DECOMPOSITION PRESSURE OF GALLIUM PHOSPHIDE. [1962] 11p. 16 refs.
Order from OTS or SLA $1.60 63-10772

Trans. of #Zhurnal Fizicheskoi Khimii (USSR) 1962, v. 36, no. 5, p. 1086-1088.
Another trans. is available from OTS or SLA $1.10 as 62-18968, 2 Aug 62 [8]p.

DESCRIPTORS: *Semiconductors, *Gallium compounds, *Phosphides, Decomposition, Pressure, Crystallization, Temperature, Phosphorus, Vapor pressure.

The temperature dependence of the decomposition pressure of gallium phosphide expressed in the following terms has been determined

$$\lg P = -\frac{10770}{T} + 9,996.$$

The vapor pressure of phosphorus at the melting point of gallium phosphide (1525°) has been determined and equals 13.45 atm. The heat of formation of the compound equals 49,511 ± 2,970 cal/mole. (Author)

Mendez, Rafael.
THE ACTION OF HELIUM ON POLONIUM UNDER THE INFLUENCE OF ELECTRIC DISCHARGES. 8 May 61, 10p. 5 refs.
Order from SLA $1.10 63-10349

Trans. of Asoc[iacion] Quim[ica] Arg[entina]. Anales, 1939, v. 27, p. 130-139.

DESCRIPTORS: *Helium, *Polonium, *Electrolysis, Ionization, *Electric discharges.

Merzhanyan, A. A.
KINETICS OF THE SURFACE ABSORPTION CARBON DIOXIDE BY WINE. [1962] 4p. 2 refs.
Order from OTS or SLA $1.10 62-20155

Trans. of Vinodelie i Vinogradarstvo SSSR, 1955, v. 15, no. 6, p. 41-42.

DESCRIPTORS: Dynamics, Surface properties, *Absorption, *Carbon dioxide, *Wines

The purpose of our investigation was to develop a comprehensive quantitative characterization of the physical condition of sparkling wine in a closed container, in order to facilitate and make more precise the calculation of the CO_2 content of the wine. The results of the investigations make it possible to clarify the phase equilibrium conditions of the closed wine CO_2 system, and to present equations of the final condition of the system and of the kinetics of the shift in the equilibrium when the temperature changes. (Author)

Micka, Karel.
THE HANGING DROP MERCURY ELECTRODE IN OSCILLOGRAPHIC POLAROGRAPHY. [1962] 5p. 8 refs
Order from SLA $1.10 63-10737

Trans. of Chemicke Zvesti (Czechoslavakia) 1962, v. 16, no. 4/5, p. 242-244.

DESCRIPTORS: *Electrodes, *Mercury, Drops, Silver, Wire, Oscillographs, Polariscopes, *Polarographic analysis, Colloids.

A hanging drop mercury electrode is described which was realized by hanging a mercury drop at the end of a silver wire that has been insulated with "ChS Epoxy PGA 40" resin. (Author)

Migal', P. K. and Pushnyak, A. N.
THE ASSOCIATION OF POLAROGRAPHIC DIFFUSION CURRENTS WITH HEAVY METALS COMPLEX-FORMATION IN SOLUTIONS OF CERTAIN ORGANIC ADDENDA. [1962] 9p. 10 refs.
Order from OTS or SLA $1.10 62-18699

Trans. of Kish[inev U.]. Uchenye Zap[iski] (USSR) 1960, v. 56, p. 171-177.

DESCRIPTORS: Solutions, *Amines, *Ethanols, *Metals, *Complex compounds, *Polarographic analysis, Diffusion.

An investigation of the density and viscosity of solutions of monoethanolamine, diethanolamine and triethanolamine in 0.1 M aqueous KNO_3 was carried out. The density and viscosity increase with increase in the number of enol groups in the amines. The dependence of the change in the value of the polarographic diffusion current on the character of complex-formation in the solution was established. (Author)

Natta, G., Pasquon, I., and Dente, M.
DISTRIBUTION CURVE OF POLYMERS OBTAINED IN PROCESSES CHARACTERIZED BY TERMINATION THROUGH CHAIN TRANSFER WITH THE MONOMER. Note 2 on Calculation of the Distribution of the Molecular Weights in the Slow Polymerizations. [1962] 28p. (figs. omitted) 6 refs.
Order from SLA $2.60 62-18918

Trans. of la Chimica e l'Industria (Italy) 1962, v. 44 [no. 1] p. 10-17.
Another trans. is available from CTS (Chem) $14.80 (subsequent copies $2.50/ea.) as CTS (Chem)-273, May 62, 3700 words.

DESCRIPTORS: Polymers, *Polymerization, *Molecular weight, Distribution, *Statistical functions, Numerical analysis, Partial differential equations. (See also CTS(Chem)-272)

Nitikin, B. A.
CHEMISTRY OF THE NOBLE GASES. IV. MIXED-CRYSTAL FORMATION BETWEEN NOBLE GASES AND OTHER SUBSTANCES. Dec. 61, 7p. 8 refs.
Order from OTS or SLA $1.10 63-10110

Trans. of [Akademiya Nauk SSSR]. Compt[es] Rend[us (Doklady) de l']Acad[emie des] Sci[ences de l'U.R.S.S.] 1939, v. 24 [no. 6] p. 562-564.

DESCRIPTORS: *Crystal structure, *Crystal growth, Crystal lattices, Piezoelectric crystals, *Helium group gases, Particle size, Molecular structure.

Heavy noble gases form mixed crystals with those volatile hydrides which have a large dipole moment -- HCl, HBr, and H_2S. In addition, they form mixed crystals (perhaps only within narrow limits) with materials whose molecules consist of several atoms, such as SO_2, CO_2, and CH_3COCH_3. Since the substitution in the molecule lattices is made by whole molecules, then the formation of mixed crystals evidently depends here not on the number of atoms in the molecule but chiefly on the size of the particles substituting for each other. (Author)

Petrenko, I. E.
METHODS FOR THE OXIDATION OF COAL BY MEANS OF IONIZING RADIATION. [1962] [10]p. 16 refs. BM Trans. no. 1824.
Order from OTS or SLA $1.10 62-33771

Trans. of Akademiya Nauk SSSR. Institut Goryuchikh Iskopaemykh. Trudy, 1960, v. 14, p. 91-97.

DESCRIPTORS: *Coal, Oxidation, Ionization, *Radiation chemistry, Radioactivity, Fuels, Radiation effects, Nuclear particles, Radioactive isotopes.

Plate, A. F. and Tarasova, L. V.
ISOMERIZATION OF CYCLOHEXANE TO METHYL-CYCLOPENTANE IN THE PRESENCE OF ALUMINUM CHLORIDE UNDER HYDROGEN PRESSURE. [1962] 5p.
Order from ATS $7.25 ATS-24P66R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1953, v. 89, no. 1, p. 77-80.

DESCRIPTORS: *Cyclopentanes, *Pentanes, *Methyl radicals, *Cyclohexanes, *Hexanes, *Aluminum compounds, *Chlorides, Hydrogen, Pressure, Isomerization

Plotnikov, A. Ya.
RECOVERY OF TALLOIL BY THE FLOTATION METHOD. 7 Nov 62, 6p. (figs. omitted) 3 refs.
Order from OTS or SLA $1.10 62-20416

Trans. of Gidroliz[naya] i Lesokhim[icheskaya] Prom[yshlennost'] (USSR) 1962, v. 15, no. 1, p. 7-9.

DESCRIPTORS: *Resins, Recovery, *Black liquor, *Flotation (Separation), Material separation, Air, Consumption, Fatty acids.

Talloil can be obtained directly from black liquor when the black liquor from sulfate-pulp manufacture is subjected to flotation by air saturated with vapors of mineral acids. Various substances acidified during the process are not surface-active, and are not extractable from the black liquor by this method. The degree of flotation considerably depends on the temperature of the black liquor, and at small concentrations of talloil in the initial black liquor also on the concentration, but it does not depend on the addition rate of air to the system. The dispersion of the gaseous phase during the flotation has great effect on the air consumption. (Author)

Romodanova, L. D. and Roshchupkin, V. I.
THE BURNING OF AMMONIUM PERCHLORATE. 18 Jan 63 [6]p. 4 refs. FTD-TT-62-1561. AD-297 566.
Order from OTS or SLA $1.10 63-15705

Unedited rough draft trans. of #Zhurnal Fizicheskoi Khimii (USSR) 1962, v. 36, no. 7, p. 1554-1555.
An abstract trans. is available from OTS or SLA $1.10 as 62-33386, AID-62-139, 19 Sep 62, 2p.

DESCRIPTORS: *Ammonium compounds, *Perchlorates, *Combustion, Chlorates, Pressure, *Explosives, *Solid rocket fuels.

The limiting pressure at which a sample burns stably at a constant density of the sample is greater, the smaller the particle size. With an increase in the density of the sample, the limiting pressure decreases. A moisture content in tablets of ammonium perchlorate of up to ~0.7% does not substantially affect the limiting pressure. The burning rate of ammonium perchlorate at a pressure of ~150 kg/cm^2 for all the cuts studied approached a constant value. (Author)

Schöberl, Alfons, Kawohl, Magdalena, and Hamm, Reimer.
THE CONVERSION OF CYSTINE AND CYSTAMINE WITH KCN, A NEW WAY IN THIAZOLINE CHEMISTRY. Rept. 2 of Information on the Reactions of Cyanides on Disulfides. [1961] 10p. 23 refs.
Order from SLA $1.10 61-20512

Trans. of Chemische Berichte (West Germany) 1951, v. 84, p. 571-576.

DESCRIPTORS: *Cyanides, *Sulfides, Chemical reactions, *Cystine, *Potassium compounds, Disproportionation, Organic acids, Propionic acids, Carboxylic acids, *Thiazoles

The acid obtained by Mauthner in addition to cysteine by the action of KCN on cystine can not have the structure of an α-amino-β-thiocyanopropionic acid. No free thiocyanogen groups were identified in the acid and its properties were not those of an α-amino acid. Thiocyanoaminopropionic acid was the primary reaction product, however, cyclization occurred with the formation of a thiazoline ring system due to the closeness of the SCN and NH_2 groups. Mauthner's acid is α-aminothiazolincarboxylic acid-(4) or 4-carboxythiazolidone -(2)-imide. In the action of KCN on cystamine, 2-aminothiazoline is formed in as smooth reaction. The basic reaction of cyanides on diaminodisulfides, which makes possible the known sodium nitroprusside test for SS linkage in peptides and proteins, is explained thereby. (Author)

Shchukarev, S. A., Andreev, S. N., and Balicheva, T. G.
INFRARED SPECTRA OF PERCHLORIC ACID AND ITS SOLUTIONS IN THE REGION 3700-2300 CM.$^{-1}$. [1962] 12p. 25 refs.
Order from OTS or SLA $1.60 62-20164

Trans. of Leningrad U. Vestnik (USSR) 1962 [v. 17] no. 4 [Seriya Fizika i Khimii no. 1] p. 128-134.

DESCRIPTORS: *Perchloric acid, Gases, Water, Solutions, Organic solvents, *Spectra (Infrared), Absorption spectra.

A study is made of vibrational frequencies of aqueous $HClO_4$ in a broad range of its concentrations, and of the vibrational spectra of this acid in gas phase and in organic, non polar solutions.

Sheka, Z. A. and Karlysheva, K. F.
THE ROLE OF MANGANESE IN THE ELECTROLYSIS OF ZINC SULPHATE SOLUTIONS (K Voprosu o Roli Margàntsa pri Elektrolize Rastvorov Sernokislogo Tsinka). Nov 62 [10]p. 20 refs. RTS 2170.
Order from OTS or SLA $1.10 63-15274

Trans. of Ukrainskii Khimicheskii Zhurnal (USSR) 1959, v. 25, no. 5, p. 668-673.

DESCRIPTORS: *Manganese, Solutions, *Zinc compounds, *Sulfates, *Electrolysis.

Shekhter, A. B. and Tret'yakov, I. I.
ELECTRON MICROSCOPE STUDY OF SURFACE CHANGES OF SOLID CATALYSTS DURING USE [Elektronno-Mikroskopicheskoe Izuchenie Izmeneniya Poverkhnosti Massivnykh Katalizatorov pri Rabote]. [1962] 10p. 5 refs.
Order from OTS or SLA $1.10 63-10372

Trans. of #Akademiya Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1953, no. 3, p. 442-447.
Another trans. is available from ATS as RJ-160.

DESCRIPTORS: *Electron microscopy, Surface properties, Solids, *Catalysts, Palladium, Platinum, Microstructure.

Slaidin, G. Ya. and Lukovtsev, P. D.
EFFECT OF THE NATURE OF THE ALKALI CATION ON THE DIFFUSION OF PROTONS IN NICKEL OXIDE [1962] 11p. 15 refs.
Order from OTS or SLA $1.60 63-10775

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 142, no. 5, p. 1130-1133.

DESCRIPTORS: *Alkaline cells, Diffusion, *Protons, *Oxides, *Nickel compounds, Electrolysis, Polarization, Quantitative analysis, Electrolytes.

Srivastava, A. M.
INVESTIGATION OF GELS BY MEANS OF ULTRASONICS (Izuchenie Gelei pri Pomoshchi Ultrazvukov). [1962] 3p. 2 refs. Fuel Research Station Trans. NT537; [DSIR] NLL M. 4898.
Order from OTS or SLA $1.10 62-25393

Trans. of #Kolloidnyi Zhurnal (USSR) 1953, v. 15, no. 4, p. 289-291.

DESCRIPTORS: *Gels, *Ultrasonic equipment, Pulse generators, Analysis, Elasticity, Chemical properties, Physical properties

Stas, M. J. S.
THE DETERMINATION AND MEASUREMENT OF THE ATOMIC WEIGHT OF NITROGEN, BROMINE, CHLORINE, SILVER, LITHIUM, POTASSIUM AND SODIUM. Pt. 3 of New Research in the Laws of Chemical Proportions. 10 Aug 60, 8p.
Order from SLA $1.10 62-18881

Trans. from Académie Royale des Sciences, des Lettres et des Beaux-Arts de Belgique. Mémoires [Couronnés et Mémoires des Savants Étrangers. Collection in 4°] 1865, v. 35.

DESCRIPTORS: *Nitrogen, *Bromine, *Chlorine, *Silver, *Lithium, *Potassium, *Sodium, *Atomic weight, Determination, Measurement.

Tani, H. and Sato, C.
STUDIES ON POLYETHYLENES. V. POLYMERIZATION REACTION OF ETHYLENE. 5. KINETICS OF POLYMERIZATION REACTION. [1962] [27]p. 15 refs.
Order from SLA $2.60 62-18926

Trans. of Kobunshi Kagaku (Japan) 1948, v. 5, p. 57-73.
Another trans. is available from SA $27.00 as SA Code-H1, Oct 62, 30p.

DESCRIPTORS: *Ethylenes, Polymerization, Reaction kinetics, Pressure, Catalysts, Aluminum, Copper, Polyethylene plastics.

Terenin, A.
THE PHOTOCHEMICAL REACTIONS OF ADSORBED IODINE MOLECULES (Fotokhimicheskie Reaktsii Adsorbirovannykh Molekul Ioda). [1962] [27]p. 9 refs.
Order from OTS or SLA $2.60 AEC-tr-5185

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1935, v. 6, p. 189-205.

DESCRIPTORS: *Photochemistry, *Iodine, Adsorption, Light, Gases, Molecular spectroscopy, Absorption spectrum, Atomic energy levels.

Topchiev, A. V. and others.
DIE ALKYLIERUNG VON 4-FLUORPHENOL MIT PROPYLEN UND CYCLOHEXEN IN GEGENWART DER KATALYSATOREN $BF_3 \cdot H_3PO_4$ und $BF_3 \cdot O(C_2H_5)_2$ (Alkylation of 4-fluorophenol by Propylene and Cyclohexene in the Presence of $BF_3H_3PO_4$ and $BF_3O(C_2H_5)_2$.
Order from TIB $1.30

Trans. in German of Akademiya Nauk SSSR. Doklady, 1960, v. 131, no. 2, p. 329-331.

DESCRIPTORS: *Alkyl radicals, *Fluorides, *Catalysts, Phenols, Boron compounds, Propenes, Cyclohexenes, Phosphorus compounds.

Topchiev, A. V., Kurashev, M. V. and others.
FLUESSIGPHASEN-ALKYLIERUNG VON BENZOL MIT PROPYLEN UEBER EINEM ALUMINIUMSILIKAT-KONTAKT BEI NIEDRIGEN TEMPERATUREN (+20, +50, +80°) (Liquid-phase Alkylation of benzene by Propylene on Aluminum Silicate at +20°C, +50°C and +80°C). 2p.
Order from TIB $0.85

Trans. in German of Akademiya Nauk SSSR. Doklady, 1960, v. 131, no. 3, p. 587.

DESCRIPTORS: Liquids, Phase studies, *Alkyl radicals, *Benzenes, *Propenes, Aluminum compounds, *Silicates

Trots, A. A. and Maksiemenko, M. S.
TO THE QUESTION OF STUDYING HIGH-PERCENTAGE FERROSILICON. [1961] 10p. 6 refs.
MDF T-124.
Order from OTS or SLA $1.10 62-23085

Trans. of Zh[urnal] Prikl[adnoi] Khim[ii] (USSR) 1948, v. 21, no. 7, p. 775-780.

DESCRIPTORS: *Iron alloys, *Silicon alloys, Gases, Separation, Chemical analysis.

High-percentage ferrosilicon, when boiled with water, liberates a very large amount of gas, from 7.4 to 28 liters per kilogram of alloy. The liberated gas contains from 0.095% to 0.329% phosphine and from 99.67% to 99.9% hydrogen. The usual amount of liberated gas is directly proportional to the degree of sample pulverization. The quantity of phosphorus, transformed into phosphine gas when the alloy is boiled with water for sample No. 1, consists of 34.0%, on the average, relative to the usual quantity of phosphorus found in the alloy and of 12.9% for sample No. 2 and 13.5% for sample No. 3. The quantity of phosphorus, transformed from the alloy into the gas when ground for four hours in a hermetically sealed mill, is the same as when the alloy is boiled with water. The composition of the gas mixture obtained from the hermetically sealed mill during the grinding is: Nitrogen, 81.14%; oxygen, 16.548%; hydrogen, 1.75%; and phosphine, 0.562%. The gas mixture, obtained from the mill, does not explode because of the low hydrogen content therein. The gas, obtained by boiling high-percentage ferrosilicon with water, explodes when mixed with air containing from 9.0% to 64.0% hydrogen. The gas, liberated by high-percentage ferrosilicon and containing from 0.095% to 0.329% phosphine, is toxic. (Author)

Tsentsiper, A. B., Eremin, E. I., and Kobozev, I. I.
EFFECT OF HYDROGEN AND ARGON ON THE ELECTROCRACKING OF METHANE AND OF ETHYLENE. [1962] 3p. 6 refs.
Order from OTS or SLA $1.10 63-10230

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 141, no. 2, p. 378-380.

DESCRIPTORS: *Methanes, *Ethylenes, Hydrocarbons, *Decomposition, Electrochemistry, *Hydrogen, *Argon, Chemical reactions.

Vartanyan, A. T. and Karpovich, I. A.
ELECTROCONDUCTIVITY AND PHOTOCONDUCTIVITY OF PHTHALOCYANINES. [1962] 4p. 7 refs.
Order from OTS or SLA $1.10 62-20384

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1956, v. 111, no. 3, p. 561-563.
Another trans. is available from SLA as R-01353, 4p.

DESCRIPTORS: *Phthalocyanines, *Conductivity, *Photoconductivity, Electrochemistry, Dyes

The results of investigation of electroconductivity and photoconductivity of the layers of phthalocyanine (metal-free) and its copper, zinc, and magnesium complexes are given.

Veselovskii, V. I.
PHOTOGALVANIC PROCESSES ON A SILVER ELECTRODE (Fotogal'vanicheskie Protsessy na Serebryanom Elektrode). [1962] 16p. 9 refs.
Order from OTS or SLA $1.60 AEC-tr-5231

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1941, v. 15, p. 145-155.

DESCRIPTORS: *Photoelectric effect, Polarization, *Silver electrodes, Silver compounds, Oxides, Electrodes.

The photogalvanic effect on a silver electrode covered with silver oxide was demonstrated and investigated. The dependence between the measured and true values characterizing the photogalvanic process was found. The effect of electrode potential on the course of photogalvanic processes was analyzed. The dependence of the parameters characterizing the photogalvanic process as a function of the potential of an anodically polarized silver electrode was investigated. The value of the quantum yield of the photogalvanic process on a silver electrode was determined as a first approximation. (Author)

Vlasenko, V. M., Rusov, M. T., Yuzefovich, G. E.
HYDROGENATION KINETICS OF CARBON DIOXIDE ON A NICKEL CATALYST. [1962] 6p. 6 refs.
Order from OTS or SLA $1.10 63-10239

Trans. of Kinetika i Kataliz (USSR) 1961 [v. 2] no. 4, p. 525-528.
Another trans. is available from ATS $8.00 as ATS-64P59R [1962] 5p.

DESCRIPTORS: *Nickel catalysts, *Carbon dioxide, *Hydrogenation, Reaction kinetics.

Hydrogenation kinetics of carbon dioxide was studied on a nickel catalyst under atmospheric pressure. The process rate is described by the 1st order equation and within the investigated limits is independent of the reaction products concentration. Passage temperatures to the internal diffusive region were found for samples with various size of grains and the avtivation energy values for the kinetic and internal diffusive regions were determined (as, respectively, 13.9 and 7.1 kcal/mole). It is assumed, that hydrogenation of carbon dioxide occurs as result of interaction with the hydrogen, chemisorbed on the surface of nickel. (Author)

Volchenkova, Z. S. and Pal'guev, S. F.
THE ELECTRICAL CONDUCTIVITY OF SOLID OXIDE SYSTEMS. II. THE SYSTEM ZrO_2-CaO. ELECTRICAL CONDUCTIVITY AND TRANSPORT NUMBERS. 28 Nov 62 [18]p. 12 refs.
FTD-TT-62-1275.
Order from OTS or SLA $1.60 63-15340

Unedited rough draft trans. of mono. Elektrokhimiya Rasplavlennykh Solevykh i Tverdykh Solevykh i Teverdykh Elektrolitov [Electrochemistry of Molten and Solid Electrolytes] AN SSSR, 1960, p. 119-126.

DESCRIPTORS: *Electrochemistry, *Ceramic materials, *Zirconium compounds, Dioxides, *Calcium compounds, *Oxides, Electrical conductance, Transport properties, Crystal structure, Sintering.
A study is made of, the temperature dependences of the electrical conductivity of solid samples of ZrO_2-CaO over a range of compositions from pure zirconium dioxide to pure calcium oxide in the range of temperatures from 300 to 1000°. The transport numbers of samples of a number of compositions were studied. In addition, the structural characteristics of sintered samples were examined, as well as some of their ceramic properties. (Author)

Zhivuchin, S. M. and Tolstoguzov, V. B.
CHEMICAL PROPERTIES OF PHOSPHONITRILE CHLORIDES (Fosfonitrilkhlorid, Ego Poluchenie, Svoistva i Primenenie). Rept. no. 2 of Phosphonitrile Chloride, Its Preparation, Properties and Application. [1961] 11p. 54 refs.
Order from OTS or SLA $1.60 62-10607

Trans. of Plast[icheskie] Massy (USSR) 1961, no. 4, p. 14-17.

DESCRIPTORS: *Phosphonitrile chlorides, Chlorides, Chemical properties, Hydrolysis.

Zlobin, V. S.
ADSORPTION VON YTTRIUM UND ZIRKONIUM AN ZIRKONIUMPHOSPHATEN (The Adsorption of Yttrium and Zirconium at Zirconium Phosphates). 12p.
Order from TIB $2.10

Trans. in German of Radiokhimiya (USSR) 1962, v. 4, no. 1, p. 54-59.

DESCRIPTORS: *Adsorption, *Yttrium, *Zirconium, *Phosphates.

EARTH SCIENCES

SOVIET GEOPHYSICAL AND METEOROLOGICAL RESEARCH IN 1962. 28 Mar 63 [40]p. 52 refs.
JPRS: 18401.
Order from OTS $1.00 63-21439

Trans of #Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1963, no. 1, p. 147-151 and 169-182.

DESCRIPTORS: *Geophysical prospecting, *Meteorology, Scientific research, Clouds, Structures, Wind, Atmospheric motion, Geophysics, Statistical analysis.

Contents:
Magnetotelluric sounding in Georgia, by G. A. Chernyavskii and G. E. Gugunava
Research on cloud structure and the scientific tasks connected with the International Year of the Quiet Sun, by A. Kh. Khrgian
Statistical characteristics of the horizontal component of wind velocity at altitudes of 6 to 12 KM, by N. Z. Pinus

Berne, L. and Bobrov, L.
METEOTRON: A FACTORY OF CLOUDS [AND] FIVE STEPS INTO THE EMPIRE OF PLUTONIC THEORY. 20 Mar 63 [16]p. JPRS: 18235.
Order from OTS $0.50 63-21367

Trans. of Tekhnika Molodezhi (USSR) 1961 [v. 29] no. 12, p. 28-30 and 34-36.

DESCRIPTORS: *Power equipment, Solar radiation, Energy conversion, *Meteorological instruments, Earth, Geophysics, *Geology, Rock (Geology), Boreholes, Marine geology

Dyunin, A. K.
THE STURCTURE OF BLOWING SNOW AND THE LAWS GOVERNING ITS FLOW [Struktura Metelevogo Snega i Zakonomernosti Snegovogo Potaka] tr. by M. C. Selby. July 62 [15]p. (figs. omitted) 11 refs.
Order from OTS or SLA $1.60 62-32505

Trans. of mono. Voprosy Ispol'zovaniya Snega, issued by Institur Geografii, Akademiya Nauk SSSR, 1956, [p. 106-119].

DESCRIPTORS: *Snow, Deposits, Wind, Velocity, Drift, Theory, Climatic factors, Particles, Microstructure, Storms.

Kalinin, Yu. D.
THE LONG-PERIOD GEOMAGNETIC VARIATION, tr. by E. R. Hope. Jan 63, 17p. 4 refs. DSIS T 379 R.
Order from NRCC NRCC C-4322

Trans. of mono. Spravochnik po Peremennomu Magnitnomu Polyu SSSR (Handbook of the Variable Magnetic Field in the USSR) Leningrad, 1954, chap. 2.

DESCRIPTORS: *Terrestrial magnetism, *Geophysics, *Periodic variations, Magnetic fields, Magnetic properties, Data.

Climatology and Meteorology

REPORT OF THE MAIN GEOPHYSICAL OBSERVATORY IMENI A. I. VOEIKOV, 1962, NO. 126[188]: [SELECTED] TRANSLATIONS. 15 Apr 63 [144]p. 83 refs. JPRS: 18696.
Order from OTS $2.75 63-21573

Trans. of Glavnaya Geofizicheskaya Observatoriya [Leningrad]. Trudy (USSR) 1952, no. 126[188] p. 3-89. A trans. of each article is available from ATS separately.

DESCRIPTORS: *Meteorology, *Artificial precipitation, Hail, Rockets, Desicants, Lead compounds, Iodides, Clouds, Torches, Crystallization, Fogs, *Weather forecasting, *Atmospheric precipitation, *Climatology, Geophysics.

Contents:
Winter precipitations induced by Italian antihail rockets, by G. M. Bashkirova and others
Use of hygroscopic salts in antihail rockets, by V. Ya. Nikandrov
A method for the use of aqueous solutions of lead iodide as agents in supercooled clouds and fogs, by E. V. Bakulina and others
Experiments concerning the interaction of aqueous solution of lead iodide on supercooled clouds, by T. N. Gromova and others
Solid fuel torches as means for introducing crystallization nuclei in fogs near the ground, by V. Ya. Nikandrov
Hail forecasting, by N. S. Shishkin
Forecast of the amount of air-mass shower precipitation, by V. T. Lenshin and others
Some results of the analysis of network observation of clouds and precipitation in the Lake Sevan mountain basin, by A. P. Chuvaev and G. I. Osipova
Connection among precipitations in various regions of the Lake Sevan basin, by V. T. Lenshin and others
Calculation of the base height of low stratiform clouds, by V. S. Kozharin
Altitude variations of microstructure in clouds of various types, by G. T. Nikandrova
Some peculiarities in the pattern of summer precipitations on the leeward slopes of mountains in arid zones of Armenia, by A. P. Chuvaev.

Bagrev, N. A.
THE DEGREE OF ANALOGY OF METEOROLOGICAL FIELDS AND THE EVALUATION OF FORECASTS. [1962] 11p. (tables omitted) 2 refs. Trans. no. 77; [DSIR] NLL M. 3115.
Order from OTS or SLA $1.60 62-24879

Unedited trans. of [Tsentral'nyi] Inst[itut] Prog[nozov]. Trudy, 1959, v. 74, p. 56-68.

DESCRIPTORS: *Meteorology, Meteorological parameters, *Weather forecasting, Statistical functions, Statistical analysis.

Glinskii, N. T. and Mikhailova, N. A.
A COMPARISON OF THE COMPUTED AND OBSERVED ELEMENTS OF WIND WAVES. [1962] 11p. 4 refs.
Order from OTS or SLA $1.60 62-20430

Trans. of Meteorologiya i Gidrologiya (USSR) 1962, no. 5, p. 40-43.

DESCRIPTORS: *Wind, Atmospheric motion, Velocity, Meteorological parameters, Wave analysis.

Sapozhnikova, S. A.
MICROCLIMATE AND LOCAL CLIMATE. [1962] 501p.
Available on loan from OTS 63-15788
Original copy poor quality

Trans. of mono. [Mikroklimat i Mestnyi Klimat] Leningrad, 1950.

DESCRIPTORS: *Micrometeorology, Climatology, Atmospheric temperature, Wind, *Soils, *Ecology, Meteorological equipment.

Zabrodskii, G. M. and Morachevskii, V. G.
STUDY OF THE TRANSPARENCY OF CLOUDS AND FOGS (Issledovanie Prozrachnosti Oblakov i Tumanov) tr. by David Kraus. June 61 [28]p. 9 refs. AmMetSoc-T-R-364+; AD-287 216.
Order from OTS or SLA $2.60 62-33767

Trans. of Arkticheskii i Antarkticheskii Nauchno-Issledovatel'skii Institut. Trudy (USSR) 1959, v. 228, p. 68-86.
Other translations are available from ATS $26.95 as ATS-27M45R [1960] 20p. and from OTS or SLA $13.50 in 61-28620, JPRS-10339, 5 Oct 61 [197]p.

DESCRIPTORS: *Clouds, *Fog, Light, Transmission, Scattering, Measurement, Photometers.

Geodesy

CLASSIFICATION OF USSR GEODETIC SURVEYS, tr. by Milos K. Achin. July 62 [4]p.
Order from OTS or SLA $1.10 63-19192

Trans. of mono. Klassifikatsiya Geodezicheskikh Setei SSSR, n. p., Feb 62.

DESCRIPTORS: Geodesics, *Surveying, *Triangulations, Classification.

Contents:
National geodetic net
Geodetic nets of local importance
Survey nets.

Blinov, N. A.
WORK OF THE TOPOGRAPHIC-GEODETIC PARTY OF THE KULUNDINSKAYA EXPEDITION OF 1931. [1962] [73]p. ACIC RR-35.
Order from OTS or SLA $7.60 62-15997

Trans. of Akademiya Nauk SSSR. Sovet po Izucheniyu [Proizvoditel'nykh Sil]. Trudy: Seriya Sibirskaya, 1934, v. 8, p. 59-114.

DESCRIPTORS: Terrain, *Geodesics, Tables, *Triangulation, Surveying, Astronomical geodesics.

Chirkhin, Yu. D. and Golovachev, M. A.
PRELIMINARY REPORT ON THE WORK OF THE INDIGIRKA PARTY OF THE YAKUTSK EXPEDITION OF THE ACADEMY OF SCIENCES OF THE USSR 1929-30 [AND] BAROMETRIC LEVELING. [1962] [67]p. 8 refs. ACIC RR-33.
Order from OTS or SLA $6.60 62-15604

Trans. of Akademiya Nauk SSSR. Sovet po Izucheniyu Proizvoditel'nykh Sil. Trudy. Seriya Yakutskaya, 1932, v. 6, p. 1-46 and 52-53.

DESCRIPTORS: *Hydrographic surveying, *Rivers, Terrestrial magnetism, Astronomical geodesics, Barometers, Geography, Leveling rods.

Gan'shin, V. G.
A NEW METHOD OF SOLVING GEODETIC PROBLEMS ON AN ELLIPSOID. [1962] [19]p. ACIC RR-38.
Order from OTS or SLA $1.60 62-25439

Trans. of Akademiya Nauk SSSR. Laboratoriya Aerometodov. Sbornik Statei, 1953, p. 119-132.

DESCRIPTORS: *Ellipsoids, *Geodesics, Geometric forms, Numerical methods and procedures, Triangulation, Trigonometry.

Grushinskii, N. P. and Sazhina, N. B.
THE QUESTION ON THE DETERMINATION OF THE ABSOLUTE VALUE OF THE GRAVITY. [1962] [13]p. 12 refs.
Order from OTS or SLA $1.60 63-10143

Trans. of Moscow U. Vestnik. [Seriya Matematiki, Mekhanika, Astronomii, Fiziki, Khimii] (USSR) 1959 [v. 14] no. 2, p. 61-68.

DESCRIPTORS: *Gravity, Acceleration, *Gravimeters, Determination.

A short survey of gravimetric methods is presented. The question is "Which method is best?"

Natanson, S. G.
ASTRONOMICAL WORK OF THE KARA KUM EXPEDITION OF 1929. [1962] [40]p. ACIC RR-26.
Order from OTS or SLA $3.60 62-25427

Trans. of Akademiya Nauk SSSR. Komissiya Ekspeditsionnykh Issledovanii. Materialy, 1930, v. 29, p. 181-208.

DESCRIPTORS: *Astronomical geodesics, Exploration, Mapping, *Deserts, Geodesics.

Rieckmann, E. and German, S.
THE POTSDAM GRAVITY SYSTEM: ITS COMPLETE DEFINITION AND CORRECT EXTENSION (Das Potsdamer Schweresystem: Seine Vollständige Definition und seine Richtige Übertragung). [1962] [60]p. 68 refs. ACIC RR-55.
Order from OTS or SLA $5.60 62-25590

Trans. of [Akademie der Wissenschaften, Munich. Deutsche Geodätische Kommission. Veröffentlichungen. Reihe B] (West Germany) 1950, no. 50, 35p.

DESCRIPTORS: *Gravity, Geodesics, Gravimeters, Tables, Determination, Measurement.

Zhongolovich, I. D. and Ochapovskii, B. L.
THE GEODETIC PARTY IN THE PAMIRS [AND] GRAVIMETRIC WORK IN THE PAMIRS. [1962] [24]p. 1 ref. ACIC RR-29.
Order from OTS or SLA $2.60 62-25429

Trans. of mono. Tadzhikskaya Kompleksnaya Ekspeditsiya 1932 (The Tadzhik General Expedition of 1932) n. p., 1932, v. 1, p. 367-375 and 384-389.

DESCRIPTORS: *Geodesics, *Gravimeters, Mapping, Geophysics, Triangulation, Terrestrial magnetism.

Geography

A REPORT ON THE COORDINATED RESEARCH ON THE DESERT REGION[S] 1958, NO. 1. 11 Apr 63 [355]p. JPRS: 18658.
Order from OTS $5.00 63-21563

Trans. of Sha Mo Ti Chu Ti Tsung Ho T'iao Ch'a Yen Chiu Pao Kao (Chinese People's Reputlic) 1958, no. 1, p. 1-108.

DESCRIPTORS: *Scientific research, *Deserts, *China, Terrain, *Geography, Climatology, Sand, Drift, Geology, Soils, Plants (Botany), Forestry, Control, Animals.

Contents:
Introduction
A report on desert survey
The natural characteristics of deserts in North China
The climate and rule of sand drifting in N. Shensi, W. Inner Monogolia and Ho Hsi corridor
Geomorphology of Ho Hsi corridor and Eastern Alashan
Soils of Ho Hsi corridor and Western Inner Mangolia
Sand plants in Western Inner Mongolia and the Ho Hsi corridor
Experience of forestation by the masses for sand fixation at Teng K'ou Hsien Alashan banner and Ho Hsi corridor
Animal husbandry in Ordos, Go-Hsi, Alashan, and T'eng Ko Li.

Gorodkov, B. N. and Aleshkov, A. N.
THE POLAR URALS ALONG THE UPPER REACHES OF THE VOIKARA, SYNYA, AND THE LYAPINA RIVERS [AND] LYAPINSKII KRAI. [1962] [92]p. 16 refs. ACIC RR-27.
Order from OTS or SLA $8.60 62-15520

Trans. of Akademiya Nauk SSSR. Komissiya Ekspeditsionnykh Issledovanii. Materialy, 1929, v. 7, p. 1-28 and 33-71.

DESCRIPTORS: Artic regions, Exploration, *Rivers Geography, *Scientific research, Plants (Botany), Biology, Geology, *Mountains, Polar regions.

Markov, E. S.
THE INTERNATIONAL COMMITTEE ON PUBLICATION OF IMW 1:1,000,000. [1962] [4]p.
Order from OTS or SLA $1.10 62-19039

Trans. of Vsesoyuznoe Geograficheskoe Obshchestvo. Izvestiya (USSR) 1909, v. 45, no. 10, p. 771-773.

DESCRIPTORS: *Conferences, Scientific organizations, Great Britain, *Maps, Scale, Geography.

Geology

An, M. Ch.
ON THE PROBLEM OF THE MECHANISM OF ROCK CRUSHING WITH SHORT TIME DELAYED EXPLOSION (K Voprosu o Mekanizime Razrusheniya Porody pri Korotkozamedlennom Vzryanii) tr. by S. Shewchuck. [1962] 14p. (foreign text included) 8 refs.
Order from OTS or SLA $1.60 UCRL Trans-743(L)

Trans. of [Akademiya Nauk Kazakhskoi SSR, Alma-Ata. Vestnik] 1959 [v. 15] no. 4, p. 90-94.

DESCRIPTORS: Time-delay fuzes, *Rock (Geology), *Explosions, Safety, Oscillation, Shock waves, *Mining engineering, Seismic waves, *Charges (Explosive), Material separation.

Ananova, E. N.
ON THE REDEPOSITED COMPLEX OF POLLEN. 13 Apr 62 [14]p. 15 refs.
Order from OTS or SLA $1.60 62-24797

Trans. of [Moskovskoe Obshchestvo Ispytatelei Prirody. Byulleten'. Otdel Biologicheskii] (USSR) 1960 [v. 35](65), no. 3, p. 132-135.

DESCRIPTORS: *Pollen, *Geological survey, Errors, Plants, Taxonomy, *Paleoecology.

Belyakov, M. F.
GEOTHERMAL ANOMALIES OF THE EMBA SALT DOMES (Geotermicheskie Anomalii Solyanykh Kupolov Emby) tr. by Ivan Mittin. 1962 [6]p. 3 refs.
Order from OTS or SLA $1.10 62-32151

Trans. of Akademiya Nauk SSSR. Doklady, 1949, v. 68, no. 6, p. 1079-1080.

DESCRIPTORS: *Temperature, Anomalies, *Rock salt, Geophysical prospecting, Thermometers, Tables

Bobov, N. G.
THE PEAT HUMMOCKS OF KAMCHATKA (Torfyanye Bugry Kamchatki). Nov 62 [22]p. refs. RTS 2175.
Order from OTS or SLA $2.60 63-15275

Trans. of [Akademiya Nauk SSSR]. Institut Merzlotovedeniya. Trudy, 1960, v. 16, p. [60]-71.

DESCRIPTORS: *Peat, Sources, Permafrost, Terrain, Geological survey, Rock (Geology), Rock-forming minerals.

Bogolyubova, L. I.
UEBER PETROGENETISCHE UND CHEMISCHE BESONDERHEITEN EINIGER SUBSTANZTYPEN DER BRAUNKOHLEN (On Petrogenetic and Chemical Peculiarities of some Substance Types of Brown Coal). 12p.
Order from TIB $2.10

Trans. in German of #Akademiya Nauk SSSR. Izvestiya. Seriya Geologicheskaya, 1959 [v. 24] no. 11, p. 44-51.

DESCRIPTORS: *Petrology, Chemical properties, *Coal.

Chekalyuk, E. B.
CALCULATION METHOD OF PHYSICAL PARAMETERS OF FORMATIONS. 15 Jan 60 [18]p. 3 refs.
Order from SLA $1.60 62-18533

Trans. of an Italian translation of Neftyanoe Khozyaistvo (USSR) 1958 [v. 36] no. 11, p. 42-48.

DESCRIPTORS: *Well drilling, Boreholes, *Petroleum, Deposits, Fluid flow, Pressure, Integrals.

Chen, Min-tszyuan.
CERTAIN SILURIAN AND DEVONIAN STROMATOPORIDS AND CORALS FROM LUSHAN REGION OF THE EASTERN ZONE OF GUYCHZHOU. [1961] 33p. (figs. tables omitted).
Order from OTS or SLA $3.60 61-15868

Trans. of [Ku Sheng Wu Hsüeh Pao] (Chinese People's Republic) 1959, v. 7, no. 4, p. 300-317.

DESCRIPTORS: Geology, *Geophysical prospecting, *Paleoecology, Limestone, Coral reefs, *Stratigraphy

Tabulata and Rugosa corals from the Middle-Upper Devonian Syan-Lu-shan limestone and from the Middle Silurian Ven-Syan schists are described. Three species of stromatoporids from the Syan-lu-shan limestone are examined. The Tabulata corals belong in the following families: Favositidae, Syringoporidae, Thecostegitidae, Multithecoporidae, Aulocystidae, and are represented by five genera; the Rugosa corals form part of the families Disphyllinae (a sub-family), Peneckiellidae, Cyathophyllidae and are represented by six genera. (Author)

Cheremenskii, G. A.
UEBER STORUNGSZONEN DES WÄRMEZUSTANDES VON GESTEINEN DURCH DAS BOHREN VON BOHRLOCHERN (On Disturbance Zones of the Thermal Condition of Rocks by Boring of Boreholes).
Order from TIB $1.10

Trans. in German of #Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1960, no. 10, p. 1507-1509.

DESCRIPTORS: Heat, *Rock, Mining engineering, Boreholes.

Chugaeva, M. N.
ORDOVICIAN DEPOSITS OF THE SELENNIAKHSKII RANGE (Ordovikskie Otlozheniya Selennyakhskogo Kryazha) tr. by Ivan Mittin. 1961 [11]p. 5 refs. GS-94.
Order from OTS or SLA $1.60 62-15738

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 137, no. 1, p. 158-161.

DESCRIPTORS: *Geology, Geological survey, *Deposits, Paleoecology, Stratigraphy, Siberia.

Erlikh, E. N.
TECTONICS OF THE CENTRAL PART OF THE SUKHAN DOWNWARP AND DISTRIBUTION OF THE KIMBERLITE BODIES IN THE BASIN OF THE OLENEK (O Tektonike Tsentral'noi Chasti Sukhanskogo Progiba i Zakonomernostyakh Raspredeniya Kimberlitovykh Tel v Basseine Reki Olenek). Nov 62 [12]p. 7 refs. RTS 2144.
Order from OTS or SLA $1.60 63-15248

Trans. of [Nauchno-Issledovatel'skii] Inst[itut] Geolog[ii] Arktiki. Inform[atsionnyi] Byulleten' (USSR) 1958, no. 12, p. 16-25.

DESCRIPTORS: *Geological survey, *Stratigraphy, Terrain, Geology, Rivers.

Harder, Hermann.
STRUCTURE OF BORON IN DETRITUS CLAY ORES. 28 Jan 62, 3p.
Order from SLA $1.10 62-20296

Trans. of Fortschritte der Mineralogie (West Germany) 1961, v. 39, no. 1, p. 148-149.

DESCRIPTORS: *Boron, *Clay minerals, Microstructure, Sedimentation, Marine geology.

Kogan, R. M.
A METHOD FOR CALCULATING THE MAGNITUDE OF THE GAMMA RADIATION AIR DOSE IN HOMOGENEOUS GEOLOGICAL MEDIA. July 60, 10p. 11 refs.
Order from OTS or SLA $1.10 AEC-tr-4098

Trans. of #Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1959, no. 7, p. 988-994.

DESCRIPTORS: *Geophysics, *Gamma emission, Rock (Geology), Air, Water, Measurement, Correlation techniques, Numerical analysis, *Gamma rays, Dose rate, Gamma-ray absorption coefficients.

A method is set forth for calculating the rate of gamma-radiation air dose in homogeneous geological media, which is based on simple energy considerations. The method has proved to be exact for air-equivalent media. With 0.3-3.0 Mev of energy of primary γ-quanta, this method can be applied to compute the rate of the air dose in rocks and, due to its simplicity and satisfactory accuracy (at least 5-10 percent), it is recommended for practical calculations. (Author)

Kraskovskii, S. A.
ON THE THERMAL CONDITIONS OF SALT DOMES (O Termal'nykh Usloviyakh Solyanykh Kupolov) tr. by Ivan Mittin. 1962 [11]p.
Order from OTS or SLA $1.60 62-32148

Trans. of Razvedka i Okhrana Nedr (USSR) 1937, v. 7, no. 3, p. 15-18.

DESCRIPTORS: Temperature, Anomalies, *Rock salt, Geophysical prospecting

Lehmann, Hans and Dutz, Hubert.
INFRA-RED SPECTROSCOPY AND AN AID FOR THE DETERMINATION OF THE MINERALOGICAL CONTENT AND NEW MINERAL FORMATION IN RAW MATERIALS AND FINISHED PRODUCTS OF THE ROCK AND EARTH INDUSTRY (Die Ultrarotspektroskopie als Hilfsmittel zur Bestimmung des Mineralbestandes und der Mineralneubildung in Roh- und Werkstoffen der Steine-und-Erden-Industrie). [1962] [75]p. (foreign text included) 70 refs.
Order from SLA $7.60 62-18198

Trans. of Tonindustrie-Zeitung (West Germany) 1959, v. 83, no. 10, p. 219-238.

DESCRIPTORS: *Infrared spectroscopy, *Minerals, Rock (Geology), *Silicates, *Cements, *Clay minerals, Soils, Materials, Hardening, Spectrographic analysis.

Mikhailov, L. L. and Kusmichev, D. N.
BEWERTUNG DER KLUFTPOROSITAT EINER SCHICHT NACH DEM PRODUKTIVITATSFAKTOR (Evaluation of the Cleavage Porosity of a Layer According to the Factor of Productivity). 6p.
Order from TIB $1.30

Trans. in German of Neftyanoe Khozyaistvo (USSR) 1962 [v. 40] no. 1, p. 36-39.

DESCRIPTOR: *Porosity, Effectiveness

Rikhter, G. D.
REPORT ON THE WORK OF THE GEOGRAPHIC-EXPLORATORY PART OF THE KOLA EXPEDITION OF 1930. [1962] [78]p. 1 ref ACIC RR-31.
Order from OTS or SLA $7.60 62-15603

Trans. of Akademiya Nauk SSSR. Sovet po Izucheniyu Proizvoditel'nykh Sil Trudy. Seriya Kol'skaya, 1933, v. 6, p 5-56
Another trans. is available from AGI $5.00

DESCRIPTORS: Geography, Exploration, *Geological survey, *Petrology, Stratigraphy, Terrain, Tables, White Sea, Triangulation, Theodolites, Photogrammetry.

Rostovtsev, V. N.
UNTERSUCHUNG DER GESTEINSSTRUKTUR IM GEBIRGSKÖRPER (Investigation of the Rock Structure in the Mountain Massif).
Order from TIB $1.80

Trans. in German of Izvestiya Vysshikh Uchebnykh Zavedenii. Gornyi Zhurnal (USSR) 1961, no. 3, p. 53-58

DESCRIPTORS: *Rock, *Structure, Mountains

Starik, I. E., Ratner, A. P. and others.
DETERMINATION OF PLUTONIUM-URANIUM RATIO IN URANIUM PITCH ORE, tr. by Lydia Venters.
Sep 61, 8p. 5 refs.
Order from OTS or SLA $1.10 AEC-tr-4820

Trans. of #Geokimiya (USSR) 1957, no. 2, p. 142-146.

DESCRIPTORS: *Plutonium, *Uranium, *Ores (Metal sources), Chemical analysis, Geochemistry, Radiochemistry, Purification, Separation.

Plutonium-239 was isolated from 2 kg of uranium pitch ore. The chemical output of plutonium during the isolation process equalled 33.3%. It was shown that the plutonium/uranium ratio in the investigated pitch ore equals $(2.0 \pm 0.3) \cdot 10^{-11}$. (Author)

Teis, R. V. and Khupakin, M. S.
PALÄOTEMPERATURBESTIMMUNG NACH DER ISOTOPENZUSAMMENSETZUNG DES SAUERSTOFFES IN KALZIT DER SCHALEN EINIGER VERSTEINERUNGEN DER KRIM (Determination of Paleotemperatures According to the Isotopic Composition of Oxygen in the Calcite of Shells of some Cretaceous Fossils from the Crimea). 6p.
Order from TIB $1.30

Trans. in German of Geokhimiya (USSR) 1957, no. 4, p. 271-276.

DESCRIPTORS: *Paleoecology, Temperatures, *Isotopes, *Oxygen, *Calcite

Yakhontova, L. K.
EXPERIMENTELLE UNTERSUCHUNGEN DER OXYDATION VON ARSENIDEN DES Co UND Ni IN LÖSUNGEN, DIE O_2 UND Co_2 ENTHALTEN (An Experimental Study of the Cobalt and Nickel Arsenide Oxidation in Solutions Containing Oxygen and Carbondioxide).
Order from TIB $3.35

Trans. in German of Geokhimiya (USSR) 1958, no. 1, p. 70-80.

DESCRIPTORS: *Oxidation, *Cobalt compounds, *Nickel compounds, *Arsenides, Oxygen, Carbon compounds, Dioxides, *Solutions

Mineralogy

Chovnyk, N. G.
POLAROGRAPHIC INVESTIGATION ON SOME MOLTEN SYSTEMS OF THE KAINITE TYPE. [1962] 12p.
Order from K-H $15.00 K-H 3737 d

Trans. of Sbornik Statei po Obshchei Khimii (USSR) 1953, v. 1, p. 179-185.

DESCRIPTORS: Minerals, *Magnesium compounds, Sulfates, *Potassium compounds, Chlorides, Hydrates, Fuzed materials, *Polarographic analysis.

Granichenko, L. G. and others.
UEBER DIE EIGENSCHAFTEN DER OBERFLÄCHE VON HOCHDISPERSEM QUARZ (The Properties of the Surface of Highly Dispersed Quartz).
Order from TIB $1.30

Trans. in German of Akademiya Nauk SSSR. Doklady, 1960, v. 131, no. 3, p. 597-600.
Another trans. is available in English from ATS $7.00 as ATS-81M46R [1960] 4p.

DESCRIPTORS: Physical properties, *Quartz, *Surface properties.

Lapustina, E. M., Krapivner, S. L., and Rimskaya, L. P.
TECHNISCH-ÖKONOMISCHER VERGLEICH DER VERSCHIEDENEN RÖSTVERFAHREN VON FLOTATIONS-SCHWEFELKIES (The Technical and Economical Comparison of Different Roasting Processes of Flotation Pyrite). 35p.
Order from TIB $4.95

Trans. in German of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1962, v. 7, no. 1, p. 25-32.

DESCRIPTORS: Flotation, *Pyrites, *Combustion.

Lukyanov, P. M.
DIE KOMPLEXE VERWERTUNG DER SCHWEFELKIES-ABBRAENDE (The Complex Utilization of Calcines). 17p.
Order from TIB $2.70

Trans. in German of Vsesoyuznoe Khimicheskoe Obshchestva. Zhurnal (USSR) 1962, v. 7, no. 1, p. 32-34. DESCRIPTORS: *Pyrites.

Plaksin, I. N. and Starchik, L. P.
SCHEIDUNG VON MINERALIEN IN EINEM DURCH STRAHLUNG ERZEUGTEN IONENSTROM (Separation of Minerals in a Stream of Ions Produced by α-radiation). Order from TIB $0.85

Trans. in German of Akademiya Nauk SSSR. Doklady, 1960, v. 131, no. 1, p. 85-86.

DESCRIPTORS: *Separation, *Minerals, Alpha spectra, *Ions.

Strunz, H.
THE ISOTYPISM OF BERLINITE AND QUARTZ. [1961] 3p. 3 refs.
Order from SLA $1.10 61-16803

Trans. of Zeitschrift für Kristallographie (Germany) 1941(?) v. 103, p. 228-229.

DESCRIPTORS: Aluminum compounds, Phosphates, *Quartz, Physical properties, Minerals.

The mineral berlinite, first made known by Blomstrand in 1868, corresponds, in its properties, to the compound $AlPO_4$, for which Huttenlocker in 1935 established a structure of the quartz type. Berlinite is isotypic with quartz; it has not been decided whether there is a possibility of mixed crystal formation (isomorphism).

Oceanography

Betin, V. V., Zhadrinskii, S. V., and Uralov, N. S.
NEW METHODS OF AERIAL OBSERVATIONS ON SEA ICE (Novye Methody Morskikh Ledovykh Avianablyudenii) tr. by M. Slessers. 1962 [42]p. HO Trans-102, no. 6.
Order from OTS or SLA $4.60 62-33569

Trans. of Gosudarstvennyi Okeanograficheskii Institut. Trudy (USSR) 1959, v. 37, p. 205-230.

DESCRIPTORS: Aerial reconnaissance, *Ice, *Baltic Sea, Navigation charts, Position finding, Measurement, Vision.

The article discusses a newly introduced semi-instrumental method of observations on sea and continental ice from aircraft by the use of an aerial angle-measuring perspectograph (perspective measuring instrument). The method was successfully used during the last three years in aerial ice reconnaissance over the Baltic Sea. The application of the perspectograph yields dependable and comparable data relative to ice conditions, including the determination of the location of ice in the sea. The method makes possible not only the measurements of a real and linear characteristics of ice but also its thickness, direction and speed of drift, elevation of ice formations over the sea surface, etc. The article presents a comparative evaluation of the accuracy of visual and of the suggested semi-instrumental observations, as a result of which it is possible to find that the accuracy in semi-instrumental ice observations from the air is comparable to the accuracy in the determination of a ship's location from coastal observations. (Author)

Borisov, V. V.
HYDROGRAPHY OF KAYDAK BAY. [1962] [38]p. 4 refs. ACIC RR-37.
Order from OTS or SLA $3.60 62-25438

Trans. of Akademiya Nauk SSSR. Komissiya po Kompleksnomu Izucheniyu Kaspiiskogo Morya. Trudy po Kompleksnomu Izucheniyu Kaspiiskogo Morya, 1937, v. 1, pt. 1, p. 13-36.

DESCRIPTORS: *Hydrology, Exploration, Geography, Astronomical geodesics, *Hydrographic surveying, Caspian Sea.

Chernigovskii, N. T.
CERTAIN DATA ON THE HYDROLOGY OF MATOCHKIN SHAR (Nekotorye Dannye k Gidrologii Prokiva Matochkin Shar) tr. by L. G. Robbins. [1962] [7]p. (tables omitted). HO Trans-131.
Order from OTS or SLA $1.10 62-32129

Trans. of [Arkticheskii i Antarkticheskii Nauchno-Issledovatel'skii Institut. Trudy] (USSR) 1936, v. 44, p. 7-18.

DESCRIPTORS: Data, *Hydrology, Depth indicators, Oceanology, Arctic regions.

Ivanov, Yu. A. and Tareev, B. A.
ON THE CALCULATION OF VERTICAL VELOCITY COMPONENT OF DRIFT CURRENT (O Raschete Vertikal'noi Sostavlyayushchei Skorosti Dreifovogo Techeniya) tr. by M. Slessers. 1962 [5]p. 2 refs. HO Trans-157.
Order from OTS or SLA $1.10 62-33572

Trans. of [Akademiya Nauk SSSR]. Morskii Gidrofizicheskii Institut. Trudy, 1960, v. 22, p. 3-4.

DESCRIPTORS: Numerical analysis, *Wind, Velocity, Drift, Friction, Antarctic regions, *Ocean currents, Equations of motion.

Meilakh, I. G.
ON THE PENETRATION OF ARCTIC OCEAN WATERS INTO THE BERING SEA (K Voprosu o Proniknoveniyu Vod Severnogo Ledovitogo Okeana v Beringova More) tr. by M. Slessers. 1961 [16]p. 3 refs. HO Trans-111.
Order from OTS or SLA $1.60 62-24065

Trans. of Problemy Arktiki (USSR) 1958, no. 3, p. 35-40.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 59-18998, Nov 58 [9]p.

DESCRIPTORS: Penetration, *Arctic regions, *Ocean currents, *Bering Sea, *Chukchi Sea, Ice, Salinity

Sarkisyan, A. S.
THE DYNAMICS OF WIND CURRENT FORMATION IN THE BAROCLYNIC OCEAN. [1962] 31p. 11 refs.
Order from OTS or SLA $3.60 63-10196

Trans. of Okeanologiya (USSR) 1962, v. 2, no. 3 [p. 393-409].

DESCRIPTORS: *Wind, Atmospheric motion, Dynamics, Hydrodynamics, Numerical analysis, Thermodynamics, *Atlantic Ocean, *Ocean currents.

This article establishes a method for solving the problem of formation and development of wind currents by giving the example of a four-level spheric model of the compact baroclynic ocean (area of the northern Atlantic), in which the terms which describe the density transfer are taken into account.

Shuleikin, V. V.
MAGNETIC AND ELECTRIC MARINE PHENOMENA. 11 Jan 63 [3]p. AID rept. S-63-4.
Order from OTS or SLA $1.10 63-15913

Review trans. of mono. Ocherki po Fizike Morya (Studies on Marine Physics) Moscow, 1962, p. 410-466.

DESCRIPTORS: *Magnetic properties, *Electrical properties, *Oceans, *Terrestrial magnetism, Theory, Measurement, *Marine geophysics.

This study provides a summary of research on geomagnetism and geoelectricity as they occur in oceans and seas.

Soskin, I. M.
ANNUAL FLUCTUATIONS OF HYDROLOGICAL CHARACTERISTICS OF THE BALTIC, BARENTS AND CASPIAN SEAS AND THE SOLAR ACTIVITY (Mnogoletnie Kolebaniya Gidrologicheskikh Kharacteristik Baltiiskogo Barentseva i Kaspiiskogo Morei i Solnechnaya Aktivnost') tr. by M. Slessers. 1961 [43]p. 21 refs. HO Trans-142.
Order from OTS or SLA $4.60 62-24068

Trans. of [Akademiya Nauk SSSR]. Okeanograficheskaya Komissiya. Trudy, 1960, v. 7, p. 3-22.

DESCRIPTORS: *Hydrology, *Baltic Sea, *Barents Sea, *Caspian Sea, Solinity, Sea water, Depth indicators, Ice, Cyclones, *Solar disturbances, Anticyclones.

The interrelation between the secular fluctuations of solar activity and the hydrological characteristics of the Baltic, Barents and Caspian Seas was investigated. It was found that the solar activity had not a direct effect on the seas but that it acted through the atmospheric circulation over the Atlantic-Eurasian sector of the Northern Hemisphere - namely, through the predominance of either the western (cyclonic) or eastern (anticyclonic) type of circulation in a given period of time. Observational data disclosed that the hydrological characteristics affected most by the type of atmospheric circulation determined by solar activity were changes of salinity for the Baltic Sea, of iciness for the Barents Sea and water level for the Caspian Sea. The interrelation among the phenomena was further defined by superimposed integral curves characterizing the variation of solar activity with time, the recurrence of atmospheric circulation types, and variations of salinity in the Baltic Sea, iciness in the Barents Sea and water level in the Caspian Sea. (Author)

Stommel, H.
EXAMPLES OF MIXING AND SPONTANEOUS CONVECTION ON THE S, T DIAGRAM [Primary Peremeshivaniya i Samovoz"uzhdayushcheisya Konvektsii na S, T -Diagramme) tr. by Wilvan G. Van Campen. Aug 62, 6p. 3 refs.
Order from OTS or SLA $1.10 63-15151

Trans. of Okeanologiya (USSR) 1962, v. 2, no. 2, p. 205-209.

DESCRIPTORS: Convection, *Hydrodynamics, *Sea water, *Salinity, *Temperature, Oceanology

In this simple treatment of the phenomenon on the salinity and temperature, (S, T) diagram there are many assumptions: The real molecular coefficients are functions of S, T; the real isolines of density of the S, T surface are not rectilinear but curve to a degree sufficient to have quite an influence on the experiment. But this note should indicate the surprising and rich variety of circumstances which in actuality can arise on the S, T diagram when two volumes of water with different temperatures and salinities are mixed together in a small vessel in the laboratory and that these circumstances are not so simple as might be concluded from standard oceanographic textbooks. (Author)

Physics of the Atmosphere

Kats, A. L.
SEASONAL CHANGES IN THE GENERAL CIRCULATION OF THE ATMOSPHERE AND LONG-RANGE FORECASTS. 18 Jan 63 [382]p. 237 refs. FTD-TT-62-498; AD-297 560.
Order from OTS or SLA $21.00 63-15761

Unedited rough draft trans. of mono. Sezonnye Izmeneniya Obshchei Tsirkulyatsii Atmosfery i Dolgosrochnye Prognozy, Leningrad, 1960, 270p.

DESCRIPTORS: *Meteorological parameters, *Atmosphere, *Weather forecasting, *Climatology, Troposphere, Stratosphere, *Hydrology, *Northern hemisphere, *Atmospheric motion, Periodic variations

This monograph sets forth the results of many years of investigation of the horizontal components of general circulation in the troposphere and lower stratosphere of the northern hemisphere as well as synoptic processes as a whole over the Atlantic-Eurasian section of the hemisphere by means of the system of circulation indices. The results of the analysis of seasonal peculiarities in the formation of mean long-period characteristics of general circulation of the atmosphere and climate are given. The connections established between long-period variations in the circulation of the atmosphere and solar activity are used for explaining the climate fluctuations observed during the last decade, and for the extended forecasting of certain climate changes. The influence of the circulation of the atmosphere in the northern hemisphere on the development of macroscopic processes over its Atlantic-Eurasian section is determined on the basis of the formation of large-scale anomalies in the air temperature during the winter months. Attached to this book is a vast material of factural data on circulation indices. (Author)

Mirtov, B. A.
METEORIC MATTER AND SOME GEOPHYSICAL PROBLEMS OF THE HIGH ATMOSPHERIC LAYERS. 25 Feb 63 [21]p. 34 refs. AID rept. T-63-29.
Order from OTS or SLA $2.60 63-15941

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1960, v. 4, p. 118-134.
Another trans. is available from ARS in Its Journal, v. 32, no. 1, $3.00.

DESCRIPTORS: *Upper atmosphere, Atmosphere, *Geophysics, *Meteors, Particles, Light, Scattering, Night sky, Brightness, Spectrographic analysis, Satellite vehicle research, Cosmic rays.

Wippermann, F. and Klug, W.
MINIMUM SMOKE STACK HEIGHTS: THEIR DETERMINATION FROM THE PRINCIPLES OF TURBULENT DIFFUSION IN THE ATMOSPHERE (Schornsteinmindesthöhen. Ihre Bestimmung aus Gesetzmässigkeit der Turbulenten Diffusion in der Atmosphäre) tr. by Robert Cahill and David Kraus. Mar 61 [56]p. 32 refs. AmMetSoc-T-G-163+; AD-258 026.
Order from OTS or SLA $5.60 62-33590

Trans. from mono. (Schornsteinmindesthöhen. Ihre Bestimmung aus Gesetzmässigkeit der Turbulenten Diffusion in der Atmosphäre) Darmstadt, July 60.

DESCRIPTORS: Gas flow, *Smokes, Turbulent flow, *Gas diffusion, Wind, Atmosphere, Distribution, Buildings, Design, Handbooks, Air, Impurities, *Wastes (Industrial)

Seismology

Berzon, I. S.
DEVELOPMENT OF SEISMIC EXPLORATION METHODS IN THE SOVIET UNION (Razvitie Metodov Seismicheskoi Razvedki v SSSR). [1962] [22]p. 125 refs.
Order from OTS or SLA $2.60 62-14602

Trans. of #Akad[emiya] Nauk SSSR. Izvest[iya]. Ser[iya] Geofiz[icheskaya] 1957, no. 11, p. 1347-1358. Also available without refs. from LC or SLA mi$2.40, ph$3.30 as 59-15122 [1959] 17p.

DESCRIPTORS: *Seismic waves, *Geophysical prospecting, Geophysics, Dynamics, High frequency, Scientific organizations, Low frequency.

For abstract see Technical Translations 2:133, 1959

Starodubrovskaya, S. P.
TOWARD A METHOD OF APPROXIMATE CALCULATIONS OF THEORETICAL SEISMOGRAMS OF WAVES ARISING IN THIN-LAYERED MEDIA. [1962] 2p.
Order from OTS or SLA $1.10 63-10220

Trans. of Akademiya Nauk SSSR. Institut Fiziki Zemli. Trudy, 1959, no. 6 [173] p. 104-105.

DESCRIPTORS: Seismic waves, *Seismographs, *Wave analysis, Numerical analysis, Mechanical waves.

ENGINEERING

Elovskaya, I. T.
EINIGE FRAGEN DER STRAHLENHYGIENE BEI GEWINNUNG UND AUFBEREITUNG VON ERZEN, DIE BEIMISCHUNGEN NATUERLICHER RADIOAKTIVER STOFFE ENTHALTEN (Some Problems of Radiation Hygiene During Winning and Washing of Ores containing Admixtures of Natural Radioactive Substances). 4p.
Order from TIB $1.10

Trans. in German of Gigiena Truda i Professional'nye Zabolevaniya (USSR) 1961, v. 5, no. 4, p. 18-24.
Another trans. is Available in English from OTS $2.25 in 61-21528, JPRS-9706, 18 July 61, 95p.

DESCRIPTORS: Mining engineering, *Ores, Additives, *Natural radioactivity

Ivashkin, V. F.
AUTOMATISCHE EINRICHTUNGEN ZUM VERSPRUEHEN VON WASSER (Automatic Devices for Water Spraying).
Order from TIB $1.30

Trans. in German of Izvestiya Vysshikh Uchebnykh Zavedenii. Gornyi Zhurnal (USSR) 1961, no. 6, p. 141-143.

DESCRIPTORS: *Automation, *Water, *Sprays

Korobov, S. S.
STRUCTURES OF SALT FLOWAGE IN THE CORES OF SALT DOMES. [1963] 4p.
Order from ATS $6.50 ATS-21Q67R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 146, no. 3, p. 666-668.

DESCRIPTORS: *Rock salt, Mining engineering.

Plaksin, I. N. and Smirnov, V. N.
ZUR FRAGE DER QUANTITATIVEN KONTROLLE DER AUFBEREITUNGSPRODUKTE MIT HILFE VON ALPHASTRAHLEN (On the Quantitative Control of the Preparation Products by Means of Alpha Rays).
Order from TIB $1.80

Trans. in German of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo, 1961, no. 4, p. 118-122.

DESCRIPTORS: *Control, Mining engineering, *Alpha spectra

Shorin, S. N.
RADIANT HEAT EXCHANGE IN THE COOLING OF GAS TURBINE COMBUSTION CHAMBERS [Luchistyi Teploobmen v Okhlazhdaemykh Kamerakh Goreniya Gazovykh Turbin]. [1961] 19p. 2 refs. MDF S 108.
Order from OTS or SLA $1.60 62-23078

Trans. of A[kademiya] N[auk] SSSR. Otd[elenie] Tekh[nicheskikh] Nauk. Izvestiya, 1954, no. 10, p. 99-111.

DESCRIPTORS: *Gas turbines, *Combustion chambers, Thermal radiation, *Heat transfer, Combustion, *Jet mixing flow, Mass transfer, Equations, Vector analysis.

Different processes in the flow of a burning medium are analyzed and their mathematical description is given. (Author)

Aeronautical Engineering

MONTHLY SYNOPSIS OF AIRCRAFT PRODUCTION IN POLAND: ORGANIZATION OF ENGINEERS AT THE UNION OF AIRCRAFT INDUSTRY. 6 Feb 61 [2]p. 4 refs. AF-1 452 221.
Order from OTS or SLA $1.10 62-32107

Trans. from open sources, 1960-61, Polish newspapers and periodicals.

DESCRIPTORS: *Aircraft, Production, *Poland, Engineering personnel, Conferences.

Sänger, E. and Sänger, I.
TECHNICAL ASPECTS, [1962] 24p.
Order from K-H $30.00 K-H 8264

Trans. of Forschungsinstitut Für Physik der Strahlantriebe. Mitteilungen (West Germany) 1957, no. 12, p. 27-40.
Another trans. is available from SLA mi$2.70, ph$4.80 as 59-10297 [1958] [25]p.

DESCRIPTORS: *Astronautics, *Space flight, *Supersonic flight, Flight speeds, Antimissile defense systems, Searchlights, *Satellite (Artificial).

Chemical Engineering

[BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR, DIVISION OF CHEMICAL SCIENCE] 1945, , NO. 3: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 4p. 6 refs.
Order from OTS or SLA $1.10 62-14130

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1945, no. 3, p. 210-p. 210-222, 233-260, 279-288.
##Other translations are available from LC or SLA mi$2.40, ph$3.30 as 61-13013, Mar 51, 14p.; mi$1.80, ph$1.80 as 61-14473, 14 Mar 61, 6p. (partial trans.); from SLA as RT-489, 7p.

DESCRIPTORS: *Abstracts, Reaction kinetics, Fatty acids, Amino acids, Synthesis (Chemistry), *Chemistry, Metalorganic compounds, Antimony compounds, Cellulose, Molecular weight.
Contents:
##Some branched chain reactions, by N. N. Semenov
Synthesis of aliphatic amino-β-acids and their most important conversions, by V. M. Rodionov
Quasicomplex organometallic compounds, by A. N. Nesmeyanov
##Organoantimony compounds. II., by A. N. Nesmeyanov and A. E. Borisov
##Molecular weight of cellulose, by O. P. Golova and V. I. Ivanov

Feb-Mar 1945 session of the Department of Chemistry, Academy of Sciences U.S.S.R.

CHEMICAL INDUSTRY, 1945, NO. 8: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 6p. 14 refs.
Order from OTS or SLA $1.10 62-10821

Abstract trans. of Khimicheskaya Promyshlennost' (USSR) 1945, no. 8, p. 1-10, 14-15 and 19-22.

DESCRIPTORS: *Indexes, *Abstracts, *Petroleum, Chemical industry, Urea formaldehyde resins, Corrosion, Gypsum, Iron compounds, Insulating materials, Chemical analysis, Chlorine.

Contents:
Development of the chemical industry and the part played by the Ural region, by A. G. Kasatkin
Urea-formaldehyde resins modified with butyl alcohol, by G. S. Petrov and E. N. Rassadina
Corrosion of iron by triple mixtures of sulfuric acid, nitric acid and water, by A. N. Krestovnikov and I. Ya. Klinov
Preparation and application of ferrone (ferrigypsum) as an insulation material, by N. N. Otvagin
Concerning the nitrite method of determination of active chlorine, by E. Shilov and others.

IMPROVEMENT IN CHEMICAL POLISHING OF BERYLLIUM. [1962] 4p.
Order from OTS or SLA $1.10 62-20264

Trans. of unidentified patent, n.p., n.d.

DESCRIPTORS: *Beryllium, *Metal polishes, Solutions, Chemical analysis, Oxidation, Resistance.

The invention concerns a phosphoric acid solution convenient for polishing beryllium. The surfaces to be polished by the solution are exposed to a temperature between 80° C and the ebullition point of the solution, and at this for a short time, for example 30 seconds. Previously to the operation above a pre-polishing process follows with or without pickling. After the treatment, the passivitation of the metal follows. (Author)

PETROLEUM INDUSTRY, 1946 [VOL. 24] NO. 1: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 6p. 9 refs.
Order from OTS or SLA $1.10 62-10811

Abstract trans. of Neftyanoe Khosyaistvo (USSR) 1946 [v. 24] no. 1, p. 1-24 and 41-65.
##A complete trans. of p. 60-62 is available from OTS or SLA $1.10 as 61-20153 [1961] 5p.

DESCRIPTORS: *Indexes, *Abstracts, *Petroleum, Geophysical prospecting, Oils, Production, Butanes, Fuels, Preservation, Steel, Pipes, Gasoline, Natural gas.

Contents:
Outcome of the search for oil in 1945 and objectives for 1946, by G. L. Grishin and P. I. Levitskii

Devonian oil in Prikama region, by V. E. Moseev
Methods of preparation of water for flooding, by G. K. Maksimovich
Stepwise separation of gas-oil mixtures from spouting wells, by P. S. Kutyumov
The polyform process, by N. E. Vishnevskii and S. V. Katsman
Triptane, by N. F. Sedykh
Synthetic motor fuels (in Germany) by K. K. Papok and others
##Raising the octane number of Grozny gasoline, by P. P. Borisov and others
Preservation of steel pipelines and tanks, by S. S. Popov

PETROLEUM INDUSTRY, 1946 [VOL. 24] NO. 2: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 4p. 1 ref.
Order from OTS or SLA $1.10 62-10812

Abstract trans. of Neftyanoe Khozyaistvo (USSR) 1946 [v. 24] no. 2, p. 1-13 and 44-64.
##Complete translations are available of p. 52-55 from SLA as RT-2646 and p. 56-64 from OTS or SLA $1.10 as 61-20169 [1961] [7]p.

DESCRIPTORS: *Indexes, *Abstracts, *Petroleum, Geophysical prospecting, Oils, Production, Catalysts, Fuels, Coal, Mixture, Pumps, Pipes.

Contents:
Geological peculiarities of the oil field Zol'nyi Ovrag, by S. N. Shan'gin and I. S. Kvikvidze
A new oil-bearing region in the southeastern dip of the Sunzhenskii mountain range, by G. M. Sukharev
Methods of processing Fergana oils, by G. V. Vinogradov and others
##Catalysts for the manufacture of synthetic fuels from coal, by S. V. Tatarskii and others
##Mixing of oil products in successive pumping through the same pipe line, by V. S. Yablonskii.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1944, VOL. 44, NO. 1: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 2p.
Order from OTS or SLA $1.10 62-10765

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1944, v. 44, no. 1, p. 18-19 and 33-36.

DESCRIPTORS: *Reports, *Indexes, *Abstracts, *Petroleum, Explosive actuators, Plants (Botany), Rubber.

Contents:
On the nature of initiating explosives, by K. K. Andreev
Relation between leaf development and formation of lacticiferous vessels in roots of Kok-Sagyz and Krym-Sagiz, by A. A. Nichiporovich and E. F. Ivanitskaya.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1944, VOL. 44, NO. 3: [TABLE OF CONTENTS AND SELECTED ABSTRACT IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 2p. 2 refs.
Order from OTS or SLA $1.10 62-10767

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1944, v. 44, no. 3, p. 104-107.

DESCRIPTORS: *Reports, *Indexes, *Abstracts, *Petroleum, Production, Iron alloys.

Contents:
A cyclic process of alumothermal production of carbon-free ferroalloys, by I. I. Kornilov.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR]. 1944, VOL. 44, NO. 4: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 2p. 4 refs.
Order from OTS or SLA $1.10 62-10768

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1944, v. 44, no. 4, p. 154-157 and 162-164.

DESCRIPTORS: *Reports, *Indexes, *Abstracts, *Petroleum, Apatite, Hydrochloric acid, Synthesis, Motion, Rubber, Plants (Botany).

Contents:
Hydrochloric acid conversion of apatites to fertilizers, rare earths and fluorides, by S. I. Vol'fkovich
Synthesis of rubber in plants. II. Probability of rubber migration in plants, by A. A. Prokof'ev.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1944, VOL. 45, NO. 7: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 2p. 2 refs.
Order from OTS or SLA $1.10 62-10776

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1944, v. 45, no. 7, p. 291-294 and 307-309.

DESCRIPTORS: *Reports, *Indexes, *Abstracts, *Petroleum, Rubber, Polymers, Synthesis, Photosynthesis, Plants (Botany).

Contents:
Strength of amorphous and crystalline rubber-like polymers by A. P. Aleksandrov and Yu. S. Lazurkin
Synthesis of rubber [in] plants. III. Photosynthesis and rubber formation in plants, by A. A. Prokof'ev.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1945, VOL. 46, NO. 1: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 2p.
Order from OTS or SLA $1.10 62-10778

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1945, v. 46, no. 1, p. 27-30 and 36-39.

Contents:
Variation in parameters of montmorillonites as affected by petroleum, by I. D. Sedletskii and S. M. Yusupova
Functioning conditions of the foliage as a factor of differentiation of laticiferous vessels in Kok-Sagyz roots, by A. A. Nichiporovich and E. F. Ivanitskaya.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1945, VOL. 46, NO. 4: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 2p. 4 refs.
Order from OTS or SLA $1.10 62-10780

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1945, v. 46, no. 4, p. 147-149.

DESCRIPTORS: *Reports, *Indexes, *Abstracts, *Petroleum, Reduction (Chemistry), Cyclones, Hydrocarbons.

Contents:
Reduction of cyclones by hydrocarbons, by B. A. Arbuzov and others.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1945, VOL. 49, NO. 2: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 2p. 3 refs.
Order from OTS or SLA $1.10 62-10794

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1945, v. 49, no. 2, p. 111-122.

DESCRIPTORS: *Reports, *Indexes, *Abstracts, *Petroleum, Molecular isomerism, Measurement, Ignition, Germanium, Oils.

Contents:
Properties of rotation isomers, by M. V. Vol'kenshtein
Measurement of the ignition limits by the jet method, by V. Kondrat'ev
Formation of germanium in oil, by V. M. Ratynskii.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1946, VOL. 51, NO. 5: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 2p. 6 refs.
Order from OTS or SLA $1.10 62-10803

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1946, v. 51, no. 5, p. 361-368.

DESCRIPTORS: *Reports, *Indexes, *Abstracts, *Petroleum, Surface properties, Viscosity, Liquids, Pressure.

Contents:
Dependence of the contact angle on the microrelief or roughness of a wetted solid surface, by B. Deryagin
Relation between the viscosity of liquids and their pressure, by G. M. Panchenkov.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1946, VOL. 51, NO. 7: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 2p. 4 refs.
Order from OTS or SLA $1.10 62-10805

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1946, v. 51, no. 7, p. 513-516 and 523-526.

DESCRIPTORS: *Reports, *Indexes, *Abstracts, *Petroleum, Geophysical prospecting, Metallurgy.

Contents:
Prospecting possibilities of the correlation refraction method (CRM) by G. A. Gamburtsev and others
Rare and disseminated elements in the raw materials, products and refuse of the "electrozinc" plant, by S. A. Borovik and N. M. Prokopenko.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1946, VOL. 52, NO. 1: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 2p. 1 ref.
Order from OTS or SLA $1.10 62-10807

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1946, v. 52, no. 1, p. 51-53 and 55-56.

DESCRIPTORS: *Reports, *Indexes, *Abstracts, *Petroleum, Hydrogen, Gases, Coal, Separation, Pyrites, Arsenic compounds, Natural gas.

Contents:
Discovery of hydrogen in the gases of Kuznetsk basin coal, by M. G. Gurevich
Influence of oxygen on the separation of pyrite and arsenopyrite by selective flotation, by I. N. Plaksin and N. S. Vlasova.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 58. 28 Mar 63 [41]p. JPRS: 18411.
Order from OTS $1.00 63-21444

Trans. from Pravda, Leningrad (USSR) 1962, 4 Dec; Kazakhstanskaya Pravda (USSR) 1962, 12 Dec; Sovetskaya Estoniya (USSR) 1962, 12 Dec; Sovetskaya Belorussiya (USSR) 1962, 2 Dec; Trud, Moscow (USSR) 1962, 4 Dec; Stroitel'naya Gazeta (USSR) 1962, 16 Dec; 19 Dec; 21 Dec.

DESCRIPTORS: *Chemical industry, *Industrial plants, Phosphates, Fibers (Synthetic), Automation, Styrene plastics, Mining engineering, Production, Construction.

Contents:
Produce more superphosphate at the Neva chemical plant, by F. Kirillov and others
The chemical industry of Kazakhstan
Chemical industry in the Estonian SSR, by A. Kivit
Building the Svetlogorsk artificial fiber plant, by E. Zhukovskii
Introducing automatic equipment at the Vladimir chemical plant, by V. Pavlov and others
Chemical-industry projects for 1963, by V. Nezhinskii
Expedite the construction of chemical-industry projects, by P. Novikov
Polystyrene shops are opened at the Gorlovka plant, by N. Nozdrachev and V. Pankratov
Expanding the Voskresensk mining-chemical combine, by G. Kozlovskii and L. Kravchenko.

Agroskin, A. A.
VARIATION IN THE ELECTRICAL RESISTANCE OF COALS DURING HEATING, tr. by R. Hennefeld. [1962] [11]p. 6 refs. Trans. no. CRL/T. 836; [DSIR NLL] M. 3667.
Order from OTS or SLA $1.60 62-25268

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1959 [v. 4, no. 7] p. 7-13.

DESCRIPTORS: Heating, *Coal, Resistance (Electrical), Electrical conductance.

A method of determining the electrical conductivity of coal during heating and to elucidate by means of this method the relationships between conductivity and temperature, heating rate and degree of metamorphosis is attempted. (Author)

Aizenshtain, P. G. and Kurchik, A. N.
UEBER EINIGE EIGENSCHAFTEN VON IN ROHÖL LÖSLICHEN DEMULGATOREN (On some Properties of Demulgators Soluble in Crude Oil). 5p.
Order from TIB $1.20

Trans. in German of Khimiya i Tekhnologiya Topliv i Masel (USSR) 1958 [v. 3] no. 10, p. 34-36.

DESCRIPTORS: *Chemical properties, *Oils, Colloids.

Averchenkov, D. O., Vartanyan, A. M. and Kopchenko, D. S.
INTRODUCTION OF ELECTROTHERMAL PROCESSES AT THE UST'-KAMENOGORSK LEAD-ZINC COMBINE (Vnedrenie Elektrotermii na Ust'-Kamenogorskom Svintsovo-Tsinkovom Kombinate). Nov 62 [9]p. RTS 2126.
Order from OTS or SLA $1.10 63-15245

Trans. of Tsvetnye Metally (USSR) [1958, v. 31] no. 5, p. 35-38.

DESCRIPTORS: *Lead, *Zinc, Electric furnaces, *Smelting, Metallurgy, Production.

Electric heating of settlers was substituted for oil heating at the Ust'-Kamenogorsk Lead-zinc Combine in 1953 without altering dimensions (length, width and depth - 7 100, 2 960 and 660 mm, respectively), but experience and joint work by works and VNIItsvetmet personnel led to reconstruction with the volume reduced from 13 to 8 m^3. After listing conditions for successful operation of such stationary settlers, the authors describe the smelting of silver-containing dross in an electric furnace under an artificial slag layer (30% Na_2O, 30% CaO, 40% SiO_2): tabulated compositions show that this method gives a higher recovery of noble metals into the silver-lead than with retort distillation. The authors outline the present electric kettle-heating method with nichrome strip resistance heaters and urge the development of induction heating for higher efficiency.

Babushkina, M. D., Babaev, E. V. and others.
AN INDUSTRIAL BUBBLING COLUMN FOR THE PRODUCTION OF SULFUROUS ACID USING CALCIUM HYDROXIDE (Promyshlennaya Barbotazhnaya Kolonna dlya Polucheniya Sul'fitnoi Kisloty po Izvestkovomolochnomu Sposobu). 1963, 7p. 1 ref. PL-480 Agr.
Order from OTS $0.50 63-11088

Trans. of Bumazhnaya Promyshlennost' (USSR) 1959 [v. 34] no. 6, p. 12-15.

DESCRIPTORS: *Towers (Chemistry), Design, Operation, *Sulfur compounds, Dioxides, Acios, Production, *Absorbents, *Calcium compounds, Hydroxides.

Basset, J[ames].
FUSION OF GRAPHITE AT ARGON PRESSURES OF UP TO 4000 kg/cm^2, [NOTE 1]. [1962] [3]p. 3 refs.
Order from SLA $1.10 62-20093

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1938, v. 208, p. 267-269 (pub. by Gauthier-Villars et Cie., Paris).
Another trans. is available from SLA mi$1.80, ph$1.80 as 60-14352 [1960] 2p.

DESCRIPTORS: *Graphite, *Argon, High pressure research, Carbon, Melting

In a test chamber for ultra-high pressure research the author has devised an experimental arrangement which made it possible to study the highly controversial question of the fusion of carbon, and has been able to obtain clear proof of the fusion of graphite and to establish an approximate value for the critical temperature and pressure at the triple point. (Author)

Belin, M. I. and Emelyanov, D. S.
PROCESS OF COAL DRYING IN FLUIDIZED STATE ("BOILING" BED). [1962] [12]p. 10 refs. C. E. Trans. 2661; [DSIR] NLL M. 8978.
Order from OTS or SLA $1.60 63-15186

Trans. of Ugol' [Ukrainy] (USSR) 1961, v. 5, no. 7, p. 16-20.

DESCRIPTORS: *Fluidized solids, *Coal, Dehydration, Driers (Apparatus).

Calderazzo, Fausto and Ercoli, Raffaele.
RESEARCH ON THE SYNTHESIS OF VANDIUM HEXACARBONYL AND ITS SALTS OF THE HEXACARBONYL VANADATE ANION. [1962] 23p.
Order from K-H $28.75 K-H 12427

Trans. of la Chimica e l'Industria (Italy) 1962, v. 44, no. 9, p. 990-995.
Another trans. is available from CTS(Chem) $13.50 subsequent copies $2.25/ea. as CTS(Chem)-309, Jan 63, 4500 words.

DESCRIPTORS: Synthesis (Chemistry), *Vanadium compounds, *Carbonyl radicals, Salts, Ions.

Chiminov, V. V. and Borodina, E. P.
SCHNELLTROCKEN-BINDEMITTEL AUF SULFITAB LAUGEBASIS (Quick-drying Binder Based on Sulphite-alcohol Distillery Refuse). 6p.
Order from TIB $1.30

Trans. in German of Liteinoe Proizvodstvo (USSR) 1960, no. 12, p. 10-11.

DESCRIPTORS: *Binders, *Sulfites, *Alcohols, Distilling plants.

Ciborowski, J. and Wlodarski, A.
FUNDAMENTAL OBSERVATIONS ON THE EFFECT OF ELECTROSTATIC PHENOMENA ON THE FLUIDIZATION PROCESS. [1963] 11p.
Order from ATS $19.75 ATS-65P66P

Trans. of Chem[ia] Stosowana (Poland) 1959, v. 3, p. 339-351.

DESCRIPTORS: *Fluidized solids, *Electrostatics.

Dachselt, E.
DESILICATION OF ALUMINATE LIQUORS. [1961] 10p. 39 refs. MDF D-126.
Order from OTS or SLA $1.10 62-15864

Trans. of Chem[ische] Techn[ik] (East Germany) 1956 [v. 8] (?) no. 4, p. 214-217.

DESCRIPTORS: *Solutions, *Aluminates, *Silicic acids, Separation, Purification

Methods of lowering the silicic acid content in aluminate liquors and alumina are worked out. Details scattered in the literature of the past sixty years are summarized here. (Author)

Gukhman, B. S. and Matrosova, N. S.
A PORTABLE ELECTRIC, PGF TYPE GAS ANALYZER FOR DETERMINING COMBUSTIBLE GASES AND VAPORS IN AIR [Perenosnyi Elektricheskii Gazoanalizator Tipa dlya Opredeleniya Goryuchikh Gazov i Parov v Vozdukhe] tr. by Donald C. Rich. 22 Jan 62 [14]p. AOMC Trans. nr 6-62.
Order from OTS or SLA $1.60 62-19001

Trans. of Khimicheskaya Promyshlennost' (USSR) 1957 [no. 8] p. 489-493.

DESCRIPTORS: Portable, *Electrical equipment, Design, *Gas analysis, Combustion, *Gases, *Vapors, Galvanometers.

Ishkin, I. P. and Burbo, P. Z.
MEANS OF PREVENTING EXPLOSIONS IN AIR SEPARATING EQUIPMENT. [1962] [16]p. 7 refs.
Order from OTS or SLA $1.60 62-20158

Trans. of Kislorod (USSR) 1947, v. 4, no. 5, p. 26-34.

DESCRIPTORS: *Explosions, Air, *Acetylenes, *Liquid oxygen, Separation, Industrial equipment.

A new method of removing acetylene from air, which provides explosion-proof operation of air separation equipment, was developed. The method is based on the results of investigation of the properties of the acetylene-liquid oxygen system, the dynamic adsorption by silica gel of acetylene from oxygen-nitrogen solutions, and the explodibility of the adsorbers. The method is finding increasing industrial application in large tonnage oxygen plants and also in plants producing technical nitrogen. (Author)

Karzhev, V. I., Kasatkin, D. F. and others.
DIE ABTRENNUNG VON AROMATISCHEN KW-STOFFEN MITTELS PROPYLENKARBONAT (The Separation of Aromatic Hydrocarbons with Propylene Carbonate). 6p.
Order from TIB $1.30

Trans. in German of Khimiya i Tekhnologiya Topliv i Masel (USSR) 1961, v. 6, no. 4, p. 6-9.
Another trans. is available in English from OTS or SLA $1.10 as 63-10240 [1962] 5p.

DESCRIPTORS: *Separation, *Hydrocarbon, *Propenes, *Carbonates

Koetschau, Rudolf.
THE DECOMPOSITION AND PREVENTION OF MINERAL OIL EMULSIONS. [1962] 6p. (foreign text included) refs.
Order from SLA $1.10 63-10473

Trans. of Angewandte Chemie (Germany) 1918 [v. 31] p. 45-[46].

DESCRIPTORS: Decomposition, *Mineral oils, *Colloids, Sodium, Solutions, Electrolysis, *Petroleum.

Krönig, Walter.
COLD-HYDROGENATION OF C_3-FRACTIONS IN LIQUID PHASE. [1962] 11p. (figs. omitted) 10 refs.
Order from SLA $1.60 62-20472

Trans. of Erdöl und Kohle-Erdgas-Petrochemie (West Germany) 1962, v. 15, no. 3, p. 176-179.

DESCRIPTORS: *Propenes, Liquids, *Hydrogenation, Impurities, Acetylenes, Dienes, Separation, *Palladium catalysts, Towers (Chemistry), Hydrocarbons.

Propylene has gained an increasing importance as a chemical raw material. As far as propylene is produced by pyrolytic processes, it contains certain quantities of methyl acetylene and propadiene which cause difficulties in the further processing. The removal of these contaminations by selective hydrogenation in the gas phase is accompanied by some disadvantages. A new process has been developed in which the C_3-fraction is selectively hydrogenated in the liquid phase--more particularly in the trickle phase--and within a temperature range of about 10 to 20°C with high throughputs over palladium containing catalysts which are fixedly arranged in the reactor in such a manner that the undesirable contaminations are completely removed without losses of propylene. This process--which is termed "Cold Hydrogenation"--has proved to be fully effective in a technical plant; after an operation time for more than one year, the activity of the catalyst has not diminished. The process can be regarded as reliable on a technical scale. The cold hydrogenation process can be advantageously applied not only to the C_3-fraction but also to other hydrocarbon fractions. (Author)

Krylov, V. N.
CHOICE OF THERMALLY STABLE CARBONIFEROUS MATERIALS IN THE MANUFACTURE OF ELECTRODES. [1961] 13p. 8 refs. MDF K 162.
Order from OTS or SLA $1.60 62-15916

Trans. of Tekh[nologicheskii] Inst[itut imeni] Leningrad[skogo Soveta]. Trudy (USSR) 1955, v. 33, p. 38-47.

DESCRIPTORS: *Electric furnaces, *Electrodes, *Coal, *Coke, Stability, Physical properties, Electrica properties.

Osmar, Donald F. and Takashima, Hisao.
CHEMICAL REFINING PROCESS OF CRUDE SUGAR BY A SOLVENT. [1962] 11p.
Order from OTS or SLA $1.60 62-20446

Trans. of published Japanese patent application Sho 36-8036, announced 19 June 61, appl. no. Sho 33-34642, 1 Dec 58.

DESCRIPTORS: *Chemical milling, *Carbohydrates, *Organic solvents, Methanols, Laboratory equipment, Design.

A chemical refining process of crude sugar by a solvent is claimed wherein the characteristic features are that moving crude sugar is brought in contact with methanol which is heated at around its boiling point in order to soften and wash away the honey coat covering the crystal of the crude sugar, the said methanol flowing against the motion of the crude sugar so as to give contact while it flows in an extent that the crystal of crude sugar is kept from destruction and that the methanol after removal of impurities from the crude sugar is purified and used circularly as an above-mentioned solvent. (Author)

Rempell, S. I., Anisheva, N. A., and Khodak, L. P.
REFERENCE GAS ELECTRODE FOR MEASUREMENTS IN CRYOLITE-ALUMINA MELTS (Gazovyi Elektrod Sravneniya dlya Izmerenii v Kriolito-Glinozemnykh). 1963, 4p. 5 refs. PL-480 Int.
Order from OTS $0.50 63-11094

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 97, no. 5, p. 859-862.
Another Trans. is available from OTS or SLA $1.10 as 63-15789 [1962] 5p.

DESCRIPTORS: *Cryolite, *Aluminum compounds, Oxides, Fuzed materials, Measurement, *Electrodes, Carbon, Gases, *Oxygen electrodes.

A study of the use of the oxygen-carbon reference electrode in measurements of electrode potentials in cryolite-alumina melts. An equation is recommended for the calculation of the equilibrium electrode potential difference at a given concentration of alumina in the electrolyte.

Rips, S. M.
A DETERMINATION OF THE TEMPERATURE FIELD AND THE HEAT LOSSES IN THE INSULATION BARRIER OF COMPRESSED-GAS TANKS. 19 Dec 62, 22p. FTD-TT-62-1459.
Order from OTS or SLA $2.60 63-15516

Unedited rough draft trans. of Khimicheskaya Promyshlennost' (USSR) 1962, no. 2, p. [135-141].

DESCRIPTORS: *Liquefied gases, Oxygen, Nitrogen, Hydrogen, *Tanks (Containers), *Gas cylinders, Pressure vessels, *Thermal insulation, *Heat transfer, Temperature.

On the basis of an investigation of the temperature field in various types of insulation, the heat flows (cold losses) are determined both during the cooling of the tank insulation (nonsteady state), as well as after the temperature field has been established, and illustrative examples are given of the calculation for liquid oxygen, nitrogen, and hydrogen. The proposed method of calculation can be successfully applied to insulation barriers for any other compressed gases. (Author)

Shornikova, A. F. and Kurdyaev, B. S.
INDUSTRIELLE ERPROBUNG DES SEPARATORS SVS-25 MIT ANREICHERUNG IN DER WIRBELSCHICHT (Industrial Testing of the Separator SVS-25 with Concentration in the Fluidizing Bed). 7p.
Order from TIB $1.45

Trans. in German of Ugol' (USSR) 1962, v. 37, no. 2, p. 37-40.

DESCRIPTORS: *Tests, *Separation, *Flotation.

Skoblo, S. Ya. and others.
STUDY OF THE KINETICS OF THE SOLIDIFICATION PROCESS IN THE AXIAL ZONE OF (STEEL) INGOTS BY THE DIFFERENTIAL SOUNDING-ROD METHOD. Feb. 63, 2900 words.
Order from HB $8.70 HB-5852

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii] Chern[aya] Met[allurgiya] (USSR) 1962, no. 3, p. 53-59.

DESCRIPTORS: *Steel, *Casting, Reaction kinetics, Rods, Test equipment, Liquids, Solids, Freezing.

Slinko, M. G., Buzhdan, Ya. M. and others.
OPTIMAL CONDITIONS FOR THE PREPARATION OF ETHYLENE OXIDE. [1962] [19]p. 10 refs.
Order from OTS or SLA $1.60 62-18771

Trans. of Kinetika i Kataliz (USSR) 1962, v. 3, no. 1, p. 145-153.

DESCRIPTORS: *Ethylene oxide, Preparation, *Catalysts, *Computers, Programming, *Oxides.

Using the dynamic programming method in connection with electronic computers, an optimal technological system was determined for the oxidation of ethylene in successive layers of catalyst with ideal blending, and with a varied method in a fixed layer with ideal displacement. It was shown that for two parallel reactions, in which the activation energy of the secondary reaction is higher than that of the effective reaction, the optimal temperature must increase as the degree of conversion increases. The amount of catalyst necessary for different ethylene oxide yields was calculated. (Author)

Vol'f, F. F. and Pudovkina, O. I.
KINETICS OF ACCUMULATION OF ORGANIC SUBSTANCES IN THE LONG CONTINUOUS PRODUCTION OF ALUMINA BY THE BAYER METHOD. [1961] 20p. 5 refs. MDF V 112.
Order from OTS or SLA $1.60 62-19893

Trans. of Legkie Metal[ly] (USSR) 1935, v. 4, no. 8, p. 24-34.

DESCRIPTORS: *Bauxite, *Aluminum compounds, Oxides, Aluminates, Production, Purification, Centrafuge separation, Sodium compounds, Hydroxides, Impurities, Organic compounds.

Civil Engineering

REMOVABLE ANCHORING SYSTEM FOR SUPPORTING AND HOLDING FORMS IN REINFORCED CONCRETE STRUCTURES AND FOR OTHER APPLICATIONS, tr. by J. B. 19 Feb 63, 7p. (figs. omitted).
Order from OTS or SLA $1.10 63-15774

Trans. of French patent 834,613, gr. 7, cl. 1, by Établissements Métallurgiques Boyer (improvement of French pat. 774,952, 12 Sep 33) appl. 29 July 37, granted 29 Aug 38, pub. 25 Nov 38.

DESCRIPTORS: *Anchors (Structural), *Reinforced concrete, Structures, Rods, Design

A removable anchoring system for supporting and holding forms in reinforced concrete structures and for other applications, characterized by the anchoring elements shaped as screws, or as curved or bent elements, such that they may be removed from a seat, whose shape corresponds to that of the elements, only by combining the principal shifting in the axial direction with an auxiliary movement, for example a movement of rotation about the axis or in a direction perpendicular to this axis, for the purpose of thus permitting an easy removal of the anchoring pieces without leaving any foreign element in the concrete mass after its completion. (Author)

Belopukhov, L. K.
CINEMATOGRAPHY OF THE STUDY OF UNDERGROUND EXPLOSIONS, tr. by Sergey Shewchuck. Mar 62, 8p. 1 ref.
Order from OTS or SLA $1.10 UCRL Trans-806(L)

Trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1960, no. 4, p. 51-54.

DESCRIPTORS: *Explosions, *Underground explosions, *Motion picture photography, Excavators, Charges (Explosive), Soils, *Cupolas, Motion, Velocity, Reaction kinetics.

Bezruk, V. M. and Margot'ev, A. N.
REINFORCING THE SOIL OF THE RAILROAD BED. [1962] 4p.
Order from OTS or SLA $1.10 63-10641

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 6] p. 57-59.

DESCRIPTORS: Railroads, *Railroad tracks, Foundations (Structures), Soil mechanics.

Butt, Yu. M. and Timashov, V. V.
DEPENDENCE OF THE BINDING PROPERTIES OF THE CLINKER MINERALS ON THEIR BURNING TEMPERATURE AND CRYSTAL STRUCTURE (Zavisimost' Vyazhushchikh Svoistv Klinkernykh Mineralov ot Temperatury Ikh Obzhiga i Kristallishcekoi Struktury) tr. by G. N. Gibson. Sep 61 [10]p. 3 refs. DSIR Library Communication no. 1065; NLL M. 4768
Order from OTS or SLA $1.10 62-25369

Trans. of Tsement (USSR) 1961, v. 27, no. 2, p. 17-22.

DESCRIPTORS: *Minerals, Binders, Combustion, Temperature, *Crystal structure, *Cements.

Eremeev, G. G.
CRITICAL REMARKS ON POWER'S HYPOTHESIS (K Kritike Gipotezy Pauersa) tr. by G. L. Cairns. Oct 61 [5]p. 1 ref. DSIR Library Communication no. 1070; NLL M. 4814.
Order from OTS or SLA $1.10 62-25371

Trans. of Beton i Zhelezobeton (USSR) 1961, no. 5, p. 234-235.

DESCRIPTORS: *Ice, *Crystals, Growth, Water, Pressure, *Structures, *Failure (Mechanics).

Färber, Leopold.
CIRCULAR SINGLE OR MULTIPLE STORY BUILDING MOUNTED FOR ROTATION ABOUT A CIRCULAR TOWER, tr. by P. C. C. 28 Feb 63, 3p. (fig. omitted) 3 refs.
Order from OTS or SLA $1.10 63-15765

Trans. of German "Auslegeschrift" 1,082,034, cl. 37f 7/01, internat'l cl. E04h, appl. 25 Apr 58, appl. announced and "Auslegeschrift" pub. 19 May 60 (addition to appl. F 2378 V/37f, "Auslegeschrift" 1,077,858).

DESCRIPTORS: *Buildings, Rotation, Towers, Design.

Färber, Leopold.
CIRCULAR SINGLE OR MULTIPLE STORY BUILDING MOUNTED FOR ROTATION ABOUT A CYLINDRICAL TOWER, tr. by P. C. C. 27 Feb 63, 3p. (fig. omitted) 3 refs.
Order from OTS or SLA $1.10 63-15766

Trans. of German "Auslegeschrift" 1,077,858, cl. 37f4, internat'l cl. E04h, appl. F 23278, 18 June 57, appl. announced and "Auslegeschrift" pub. 17 Mar 60.

DESCRIPTORS: *Buildings, Rotation, Towers, Design.

The invention relates to the application of a rotatable building in connection with towers whose heights are a multiple of the building height. In this case the building must be mounted on a plate projecting from the tower at any desired level, the load being distributed as uniformly as possible. This result is obtained by means of rollers whose length approximately corresponds to the width of the projecting plate. In a further development of the invention the outer wall of the building is suitably extended around the edge of the projecting plate. (Author)

Firstov, V. G.
THE RADIOMETRIC CONTROL OF SOIL DENSITY (Radiometricheskii Kontrol' Uplotneniya Zemlyanogo Polotna). [1962] [8]p.
Order from OTS or SLA $1.10 AEC-tr-5512

Trans. of Avtomobil'nye Dorogi (USSR) 1961, v. 24, no. 4, p. 22-23.

DESCRIPTORS: *Soils, *Soil mechanics, *Density, Control, *Radiation measurement systems, Densimeters, Gamma-ray scattering, Roads

Jiang, Peng-man.
LIQUIDITY INDEX OF COMPACTED COHESIVE SOILS IN SOME ROLLED-FILL DAMS IN CHINA, tr. by H. G. Panel. Nov 60 [8]p. 20 refs. DSIR Library Communication 1016; NLL M.3187.
Order from OTS or SLA $1.10 62-25376

Trans. of [Shui Li Hsüeh Pao] (Chinese People's Republic) 1959, v. 6, no. 3, p. 35-40.

DESCRIPTORS: *Dams, *Soil mechanics, Soils, Earth, Air, Water, Humidity, Hydraulic reservoirs, Construction.

This paper presents the values of liquidity index of the cohesive soils in five small earth dams with a height of about 20 metres in Hunan province and in the core wall of one large earth dam with a height of 48 metres, together with a comparison of these values of liquidity index with those of the compacted cohesive soils obtained by the laboratory compaction tests usually used in China. In this paper, the methods for the determination of air content and degree of saturation of the compacted soils are also discussed. To use these values, it is helpful to determine the control densities of the compacted cohesive earth materials in the rolled-fill earth dams. (Author)

Kazakov, A.
PROBLEMS CONNECTED WITH MASTERING THE BRATSK RESERVOIR FOR TRANSPORTATION PURPOSES (Zadachi Transportnovo Osvoeniya Bratskovo Vodokhranilishcha) tr. by B. M ... 31 July 62 5p. (figs. omitted). I-1688.
Order from OTS or SLA $1.10 62-33089

Trans. of Rechnoi Transport (USSR) 1962 [v. 21] no. 4, p. 34-36.

DESCRIPTORS: *Dams, *Transportation, Rivers, Navigational aids, Harbors, *Construction, Hydrology.

Puzakov, N.
FEATURES OF BUILDING ROADS IN PERMA-FROZEN GROUND REGIONS. 14 Dec 62 [9]p. FTD-TT-62-1524.
Order from OTS or SLA $1.10 63-15341

Unedited rough draft trans. of Avtomobil'nye Dorogi (USSR) 1962 [v. 25] no. 1, p. 27-28.

DESCRIPTORS: *Roads, Construction, *Permafrost, Soils, Ice, Drainage.

Shishkin, A. A.
IMPROVED CONSTRUCTION OF LARGE-PANEL FLATS (Sovershenstvovanie Konstruktsii Panel'nykh Domov) tr. by G. L. Cairns. June 62 [6]p. Library Communication no. 1113.
Order from OTS or SLA $1.10 62-33620

Abridged trans. of Beton i Zhelezobeton (USSR) 1961, no. 12, p. 531-536.

DESCRIPTORS: *Construction, *Panels (Structural), Design, *Joints, Adhesives, Vinyl plastics, Corrosion inhibition, Structural parts, Concrete.

This paper examines the initial experience gained in the use of blocks of flats made of large aerated-concrete panels, especially as regards the joints between panels. Improvements in the design of these joints are suggested.

Yudin, V. K.
DETERMINATION OF THE LOAD-BEARING CAPACITY OF REINFORCED CONCRETE ELEMENTS OF RECTANGULAR CROSS-SECTION UNDER COMBINED TORSION AND BENDING. [1962] 11p.
Order from OTS or SLA $1.60 63-10195

Trans. of Beton i Zhelezobeton (USSR) 1962, no. 6, p. 265-268.

DESCRIPTORS: *Reinforced concrete, Stresses, Failure (Mechanics), Moments, Loading (Mechanics), Statics, Fracture (Mechanics).

Electrical and Electronic Engineering

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 121 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES). 28 Mar 63 [7]p. JPRS-18420.
Order from OTS $0.50 63-21452

Abstract trans. of Messen-Steuern-Regeln (Germany) 1963, v. 6, no. 1, p. 2-39.

DESCRIPTORS: *Abstracts, East Germany, *Electronics, *Engineering, Astronautics, Control systems, Cybernetics, Polynomials, Magnetic amplifiers, Induction motors, Transients, Paper, Machines, Humidity.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 125 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES). 3 Apr 63 [8]p. JPRS: 18525.
Order from OTS $0.50 63-21492

Abstract trans. of Polska Akademia Nauk. Bulletin: Series des Sciences Techniques, 1962, v. 10, no. 11, p. 429-433, 435-441, 443-449, 451-465, 467-469, 471-477, 479-[483].

DESCRIPTORS: *Abstracts, *Poland, *Electronics, *Engineering, Energy conversion, Thermoelectricity, Rods, Elasticity, Dynamics, Deflection, Hydrodynamics, Compressive properties, *Mechanics, Tensor analysis, Equations of motion, Continuum mechanics, Germanium, Diodes.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 134 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES). 16 Apr 63 [26]p. JPRS: 18728.
Order from OTS $0.75 63-21587

Consists of abstracts of articles from the scientific and technical journals of East Germany, Hungary, and Poland.

DESCRIPTORS: *Abstracts, *East Germany, *Hungary, *Poland, *Electronics, *Engineering, Acoustics, Waveguides, Doppler radar, Biographies, Automation, Computers, Voltage regulators, Magnetic amplifiers, Magnetic drives, Liquid level gages, Electronic switches, Flames, Control, Amplifiers, Electric motors, Flowmeters, Control systems, Timing devices, Magnetic recording systems, Hydraulic systems, Radiation measurement systems, Textile industry, Thermometers, Physics, Optics, Industrial production, Standardization, Optical glass, Elasticity, Power supplies, Stresses, Conical bodies, Pressure, Waver waves, *Mechanics.

[ALL UNION CONFERENCE ON STATISTICAL RADIO PHYSICS, GOR'KII, OCT 58]: RESOLUTIONS. [1961] 2p. MDF ABCON-IS.
Order from OTS $0.50 62-11524

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Radiofizika (USSR) 1959, v. 2, no. 1, p. 145-146.

DESCRIPTORS: *Conferences, Scientific research, Statistical functions, *Radio waves, *Propagation, *Noise (Radio), *Microwave equipment, *Electronics.

Contents:
Statistical phenomena in generators, amplifiers and radio measuring apparatus
Wave propagation in statistically inhomogeneous media
Statistical phenomena in quantum radio physics
Organizational proposals of the conference

ALTERNATING VOLTAGE STABILIZER, tr. by J. R. -P. 20 Dec 62, 9p. (figs. omitted).
Order from OTS or SLA $1.10 63-13754

Trans. of Norwegian patent 64,934, cl. $21d^2$, by Licentia Patent-Verwaltungs-Gesellschaft m.b.H., Germany, pat. from 28 Nov 39, pub. 22 June 42.

DESCRIPTORS: *Alternating current, *Voltage regulators, Oscillator circuits.

MAGNETIC TAPES (6.25 mm) SPECIFICATION RTF SN 401 C, NOV 58. [1962] 9p.
Order from SLA $1.10 62-16727

Trans. of French industrial specification RTF (Radiodiffusiontelevision Francaise) SN 401 C, Nov 58.

DESCRIPTORS: *Magnetic tape, *Magnetic recording systems, Specifications, Magnetic coatings, Tests, Adhesion, Mechanical properties, Electromagnetic properties, Plastics, Production.

MICROMINIATURE DEVICES FOR ELECTRONICS. 17 Jan 63 [4]p. AID rept. S-63-13. AD-295 986
Order from OTS or SLA $1.10 63-15324

Review trans. of #Izvestiya Vysshikh Uchebnykh Zavedenii. Radiotekhnika (USSR) 1962, v. 5, no. 4, p. 469-475 and 538-539.

DESCRIPTORS: *Electronic equipment, *Microminiaturization (Electronics), Radio equipment, Printed circuits, Resistors, Conferences.

Contents:
Scientific and technical conference of schools of higher education on the microminiaturization of radioelectronic devices (no. 1) by R. S. Kil'metov and others
Prospective and rational structures of printed resistors in microminiature equipment, by Yu. P. Ermolaev.

PROCESS FOR SYNCHRONIZATION, PARTICULARLY FOR TELEGRAPHIC APPARATUS. [1962] 4p. (figs. omitted).
Order from OTS or SLA $1.10 62-18557

Trans. of French patent 877,077, appl. 18 Nov 41, granted 24 Aug 42, pub. 26 Nov 42, appl. in Germany 2 Jan 41.

DESCRIPTORS: *Synchronization (Electronics), *Telegraph equipment, Rectifiers, Capacitors, Tuning devices, Circuits.

Aizenberg, G. Z.
BASES AND METHODS OF SHORTWAVE ANTENNA CONSTRUCTION: COPHASED HORIZONTAL ANTENNA 22 Dec 59 [73]p. [US]ASIA SC-60/59.
Order from OTS or SLA $7.60 62-32785

Trans. of mono. Antenny dlya Magistral'nykh Radiosvyazei (Antennas for National Radio Links) Moscow, 1948, chap. 5, p. 133-156 and chap. 8, p. 207-225.

DESCRIPTORS: *Antennas, *Antenna Configuration, Transmitter-receivers, Radio waves, Propagation, Design, Construction, Ionosphere, Ionospheric propagation.

Contents:
Fundamentals and methods of shortwave antenna construction
Cophasal horizontal array (SG-antenna).

Akodis, M. M. and others.
UNTERSUCHUNG DER SPERRWIRKUNG VON IONEN-VENTILEN MIT EINER PRUEFSCHALTUNG (Investigation of the Rectifying Effect of Ionic Valves with a Monitoring Circuit). 10p.
Order from TIB $1.80

Trans. in German of Elektrichestvo (USSR) 1954, no. 7, p. 52-[56].

DESCRIPTORS: *Valves, *Ions, *Circuits, Rectifiers

Belyakov, N. N. and Sherentsis, A. N.
DER SCHUTZ VON 35 - 500 kV -VERTEILUNGSANLAGEN GEGEN ATMOSPHÄRISCHE UEBERSPANNUNGEN UNTER MODERNEN GESICHTSPUNKTEN (The Protection of 35 - 500 kV Distribution Gears against Atmospheric Overtension under Modern Considerations). 15p.
Order from TIB $2.45

Trans. in German of Elektrichestvo (USSR) 1960, no. 7, p. 51-56.

DESCRIPTORS: Distributors, *Atmospheric electricity, Voltage, *Transmission gears.

Bonali, Alessandro and Calcinal, Aldo.
PROCESSES FOR THE MANUFACTURE OF ELECTRICAL CONDENSERS. [1962] 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-10293

Trans. of second addition patent 957,395 to patent 957,395, internat. cl. H 01 g, by International Standard Electric Corp. (USA) appl. 4 Jan 57, granted 20 July 59, pub. 13 Jan 60 (pat. appl. filed in Italy 5 Jan 56, by Fabrica Apparecchiature per Comunicazioni Elettriche=Standard (S. p. A)) (main pat. taken 17 Dec 47, first add. no. 68,660).

DESCRIPTORS: *Capacitors, Metals, Straps, Electric insulation, Manufacturing methods.

This invention pertains to a method for the production of condensers, making it possible to obtain a larger output of condenser units formed of metallic strips. According to the method proposed by this invention, there is applied to the two surfaces of a wider metallic strip, coatings of insulating materials, two other narrower parallel metallic coatings being then applied on each outer surface; the strip is then wound after having first been provided with two metallic linings forming special current collectors. The final operation consists of cutting the roll thus formed in the middle so as to obtain two complete condensers. When the unit is not divided in two the obtained product forms two condensers connected in series and permitting a higher service potential. The same process can be applied to condensers formed from insulating strip. (Author)

Doroguntsev, V. G. and Ovcharenko, N. I.
SOME PROBLEMS OF MAKING A POWER DIRECTIONAL RELAY BASED ON THE HALL EFFECT [Nekotorye Voprosy Vypolneniya Rele Napravleniya Moshchnosti na Osnove Effekta Khalla]. [1962] [17]p. 9 refs. [DSIR] NLL M. 3580.
Order from OTS or SLA $1.60 62-24680

Trans. of Elektrichestvo (USSR) 1961, no. 9, p. 57-63. Another trans. is available from OTS or SLA $2.60 as 62-24679, AEI TP/T-3094, 12 Jan 62 [27]p.

DESCRIPTORS: *Hall effect, Relays, *Electric relays, Circuits, Polarized relays.

For abstract see Technical Translations 8: 795, 1962

Düsing, W.
GLASS-TO-KOVAR SEALS FOR HIGH VACUUM TUBES. 9 Dec 53 [18]p. (figs. omitted) 2 refs.
Order from SLA $1.60 62-18962

Trans. of Telefunken-Zeitung (West Germany) 1953, v. 26, no. 99 [p. 111-120].
Another trans. is available from SLA as 57-1369, 35p.

DESCRIPTORS: *Glass seals, *Metal seals, *Vacuum apparatus, Adhesion, High frequency, *Electron tubes, Alloys, *Seals (Stoppers), Electrolysis.

Gautier, P., Kantorowiez, G., and Nalot, J.
THE T. P. O. M. OPERATING ON PULSES. [1962] 16p. 23 refs.
Order from SLA $1.60 63-10247

Trans. of Annales de Radioélectricité (France) 1962, v. 17, no. 67 [p. 3-12].

DESCRIPTORS: *Electron tubes, *Magnetrons, Electromagnetic waves, Propagation, *Amplifiers, High frequency, Operation, *Electromagnetic pulses, Theory.

Gelig, A. [kh.].
ON THE APPLICATION OF LYAPUNOV'S SECOND METHOD TO THE STABILITY INVESTIGATION OF THE MOTION OF NONLINEAR DISCONTINUOUS SYSTEMS. Aug 62 [7]p. 9 refs.
Order from OTS or SLA $1.10 62-20258

Trans. of Leningrad U. Vestnik (USSR) 1962 [v. 17] no. 7, [Seriya Matematiki, Mekhaniki i Astronomii no. 2] p. 58-61.

DESCRIPTORS: *Nonlinear systems, Automatic, *Control systems, Stability, Motion, Equations of motion, *Functions, Integrals.

The problems of stability "in the large" of systems of indirect automatic control with one control member, when the non-linear characteristic has discontinuities of the 1st order are investigated. It is proved that all the results obtained for systems with continuous non-linearity by analysing Lyapunov's function presented as "quadratic for plus integral from non-linearity" are valid for such systems as well. (Author)

Greiner, J.
THE LOCUS OF THE EXTREMES OF THE FIELD COMPONENTS FOR A RECORDING HEAD. 6 June 56 [25]p. (figs. omitted) 2 refs.
Order from SLA $2.60 62-18692

Trans. of Nachrichtentechnik (German Democratic Republic) [1956] v. 6, no. 6, p. 266-273.

DESCRIPTORS: *Magnetic recording systems, Mathematical analysis, Conformal mapping.

The locus curves for the extreme values of the longitudinal and perpendicular components of six gap functions are evaluated by the methods of conformal mapping. (Author)

Hanson, Anton Frans Eduard.
AUTOMATIC CIRCUIT BREAKER, tr. by F. H. B. 5 Feb 63, 4p. (figs. omitted).
Order from OTS or SLA $1.10 63-15762

Trans. of Dutch patent 6,711, cl. 21 c, gr. 58, appl. 1 July 20, laid open to public inspection 1 Dec 20, granted 28 Dec 21, pub. 15 Mar 22.

DESCRIPTORS: Automatic, *Circuit breakers, Design

The invention relates to a circuit breaker containing a wire through which the current flows and which by its expansion breaks the circuit. The novel apparatus is provided with a curved spring which is kept under tension by the wire to be heated. The resilient force of the curved portion is greatly altered when the length of the wire is altered, and this alteration is utilized for pulling away a latch or projection whereby a spring-urged contact element is released and breaks the circuit

Kondilenko, I. I. and Lisitsa, M. P.
NEW HIGH INTENSITY HYDROGEN LAMP. [1961] 9p. (figs. omitted) 5 refs. MDF K 129.
Order from OTS or SLA $1.10 62-23121

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1955, v. 25, no. 7, p. 1316-1322.
Another trans. is available from CCT as 1365TM, 5p.

DESCRIPTORS: *Ultraviolet equipment, Design, Construction, *Lighting equipment, Electric arcs, Hydrogen, Spectrographic analysis.

In this work, the construction and results of investigations on a new high-intensity hydrogen lamp are described. (Author)

Kirillova, F. M.
ON THE CONTINUOUS DEPENDENCE OF THE SOLUTION TO ONE PROBLEM OF OPTIMAL REGULATION ON THE INITIAL DATA AND THE PARAMETERS. Oct 62 [9]p. 6 refs.
Order from OTS or SLA $1.10 62-20263

Trans. of Uspekhi Matematicheskikh Nauk (USSR) 1962, v. 17, no. 4(106) p. 141-146.

DESCRIPTORS: *Control systems, Mathematical analysis, *Differential equations, Real variables, Matrix algebra, Vector analysis.

In this paper the author considers the time optimal regulation of a system described by

$$\frac{dx}{dt} = f(x, t, \quad) + B(t, \quad) u(t)$$

It is shown that the minimal time, $T(x_0, t_0, \quad)$ depends continuously on x_0 and where $T(x_0, t_0, \quad)$ is the response time of the time optimal regulated system (1) with $x(t_0) = x_0$. (Author)

Lyubimov, L. A., Veselov, G. N., and Beit, N. A.
DIELEKTRISCHE WELLENLEITER MIT ELLIPTISCHEM QUERSCHNITT. (Dielectric waveguides of Elliptic Cross Section). 17p.
Order from TIB $2.70

Trans. in German of #Radiotekhnika i Elektronika (USSR) 1961 [v. 6] no. 11, p. 1871-1880.

DESCRIPTORS: *Dielectric properties, *Waveguides.

Marshak, I. S., Vasil'ev, V. I. and others.
HIGH-POWER TUBULAR "SOLAR" TYPE XENON LAMPS FUNCTIONING WITHOUT BALLAST (Moshchnye Trubchatye Solnechnye Ksenonvye Lampy Rabotaushchie bez Ballasta). May 62 [16]p. 20 refs. TIL/T. 5329(c); [DSIR] NLL M. 3851; AD-276 390.
Order from OTS or SLA $1.60 63-19227

Trans. of Svetotekhnika (USSR) 1961, v. 8, no. 8, p. 8-17.

DESCRIPTORS: *Lighting equipment, *Xenon lamps, Theory, Construction, Tests, Electrical properties, *Plasma physics, Light.

Experimental data are obtained to verify the theoretical possibility of evolving continously burning ballast-free tubular, xenon lamps. An experimental basis is provided for the practical working characteristics of such

lamps. As a result of this work it is possible to standardise the production of powerful ballast-free xenon lamps, to formulate methods of design and to deduce basic lighting and operational characteristics. (TIL abstract)

Neiman, S. B.
VERTIKALE SYNCHRONMOTOREN FUER HOCH-LEISTUNGSPUMPEN (Vertical Synchro-Motors for Heavy-duty Pumps). 11p.
Order from TIB $2.00

Trans. in German of Vestnik Elektropromyshlennosti (USSR) 1962, v. 33, no. 3, p. 29-33.

DESCRIPTORS: *Synchro receivers, *Pumps.

Ofengenden, R. G.
MAGNETIC RECORDING OF ELECTRICAL PULSES. [1961] 20p. 8 refs. MDF 0 101.
Order from OTS or SLA $1.60 62-19851

Trans. of Radiotekhnika (USSR) 1955, v. 10, no. 11, p. 65-79.

DESCRIPTORS: *Electromagnetic pulses, *Magnetic recording systems, Amplifiers, Mathematical analysis.

A computation is made of the magnetic flow in the reproducing head during the recording of a unit impulse. Formulas are given to determine the duration of the temporary characteristics, the resolving power, the range of the reproducible impulses during contactless recording. Experimental results are given on the dependence of the resolving power and the range of reproducible impulses on the recording region, the magnitude of the front slot of the head, and the gap between the carrier and the head and the carrier state. The passage of reproducible impulses through a linear circuit is analyzed. (Author)

Pomazanov, I. N. and Tikhomirov, P. L.
THERMOELECTRIC REFRIGERATOR OPERATING ON HEAT ENERGY. [1962] 7p. 6 refs.
Order from OTS or SLA $1.10 AEC-tr-5105

Trans. of Kholodil'naya Tekhnika (USSR) 1961, v. 38, no. 4, p. 24-27.

DESCRIPTORS: *Refrigeration systems, *Thermoelectricity, Operation, Heat, Energy, *Semiconductors, Peltier effect, Cooling.

Rutman, R. S.
A SURVEY ON ADAPTIVE SYSTEMS WITH A DYNAMIC CHARACTERISTIC ADJUSTMENT. Sep 62 [48]p. 42 refs.
Order from OTS or SLA $4.60 62-20262

Trans. of #Avtomatika i Telemekhanika (USSR) 1962, v. 23, no. 5, p. 661-684.

DESCRIPTORS: Control systems, *Adaptive control systems, Dynamics, Classification, Reviews, Synthesis.

Rutman classifies and discusses the greater percentage of adaptive control systems that have been reported in the open literature. (Author)

Rybchenko, P. F.
DIE BETRIEBSZUSTÄNDE VON IN REIHE GESCHALTETEN TRANSFORMATOREN MIT UNTERSCHIEDLICHEN UEBERSETZUNGSVERHÄLTNISSEN (Working Order of Transformers Joined in Series with Different Transformation Ratio). 14p.
Order from TIB $2.35

Trans. in German of Elektrichestvo (USSR) 1961, no. 2, p. 55-61.

DESCRIPTORS: *Transformers, Circuits

Simon, J. C.
SOME FLUCTUATION PROBLEMS IN RADIO ENGINEERING. [1961] 36p. 10 refs. MDF S 112.
Order from OTS or SLA $3.60 62-23076

Trans. of Annales de Radioélectricité (France) 1955, v. 10, no. 39, p. 3-19.

DESCRIPTORS: *Radio transmission, Oscillation, Probability, *Vector analysis, Statistical functions, Radio waves, Propagation, Scattering, *Antennas, *Radar signals, *Transmission lines.

The statistical approach enables simple solutions to be given to a great many problems in radio electricity. The study of a sum of vectors with random phase angles can be applied to numerous cases. This study is explained in a first, theoretical, part. The correlation function concept applied to this problem is analyzed in detail. The second part treats various practical applications: multiple reflections on a transmission line; propagation problems; effect of scattered echoes, radiation of a great number of sources, fluctuation of a radar echo, effect of phase errors on antenna characteristics. (Author)

Sysoev, M. I.
DIE GRUNDLEGENDEN GESETZMÄSSIGKEITEN DER IMPULSFESTIGKEIT DER ISOLATION LUFTGEFÜLLTER SCHALTGERÄTE (Fundamental Laws on the Impulse Strength of the Insulation in Air-filled Switching Apparatus). 12p.
Order from TIB $2.10

Trans. in German of Elektrichestvo (USSR) 1960, no. 1, p. 63-68.
Another trans. is available in English from OTS or SLA $1.60 as 61-23250, CE Trans-1701 [1961] [11]p.

DESCRIPTORS: *Insulation, *Switches, Air

Thierbach, Dietwalt.
DUPLEX OPERATION TRANSMISSION SYSTEM WITH FEEDBACK SUPPRESSORS, tr. by J. B. 6 Feb 63, 6p. (figs. omitted).
Order from OTS or SLA $1.10 63-15769

Trans. of German patent 526,405, cl. 21a[4]. gr. 50, by Siemens & Halske Akt. -Ges., pat. from 29 Jan 29, granting of pat. announced 13 May 31, pub. 5 June 31.

DESCRIPTORS: *Wave transmission, Feedback, Suppressors, *Communication equipment, Design, *Multiplex, Communication systems.

The invention involves a duplex operation transmission system with feedback suppressors, in which, for the purpose of transmitting communication currents in the portion of the system sensitive to disturbances, for example in a radio path, different frequency ranges, for example different carrier waves (frequencies), are employed for both directions of traffic, characterized in that the suppressors are controlled by a special pilot (control) current which is switched by the communication currents, said pilot current having one or more frequencies that are outside the frequency ranges of communication currents. (Author)

Tikhomirov, V. G.
NEUES SYSTEM ZUR KUEHLUNG VON TRANSFORMA-TORKERNEN FUER DIE INDUCTIVE ERWÄRMUNG (A New System for Cooling of Transformer Cores for Inductive Heating). 4p.
Order from TIB $1.10

Trans. in German of Vestnik Elektropromyshlennosti (USSR) 1961, v. 32, no. 8, p. 29-30.

DESCRIPTORS: *Cooling, *Transformers, Induction heating.

Vasil'ev, Yu. K. and Bogaenko, I. N.
THERMAL TESTS ON LARGE ROLLING MILL MACHINES IN OPERATING CONDITIONS. Mar 63.
Order from BISI 3 5s BISI-3183

Trans. of Vestnik Elektropromyshlennosti (USSR) 1962 [v. 33] no. 12, p. 32-35.

DESCRIPTORS: Tests, *Electric motors, Operation, Standards, Heating, Corrections, Cooling, Air, *Rolling mills.

Werner, P. H.
NEW METHOD OF MEASURING THE SPEED OF UNWINDING OF MAGNETIC TAPES. [1962] 3p. (figs. formulae omitted).
Order from SLA $1.10 63-10080

Trans. of [PTT] Technische Mitteilungen (Switzerland) 1951 [v. 29] no. 10, p. 390-392.

DESCRIPTORS: *Magnetic tape, Velocity, Measurement, *Magnetic recording systems, Operation, Maintenance.

Wüsteney, H.
MODERN PERFORATED TAPE DEVICES FOR TELETYPEWRITER COMMUNICATION. [1962] 7p. (figs. omitted).
Order from SLA $1.10 63-10044

Trans. of Siemens Zeitschrift (West Germany) 1952, v. 26 [no. 5] p. 213-219.

DESCRIPTORS: *Teletype systems, *Communication equipment, Tapes, Design, Construction, Operation.

Yakubovich, V. A.
THE SOLUTION OF CERTAIN MATRIX INEQUALITIES APPEARING IN THE THEORY OF AUTOMATIC REGULATION. July 62 [8]p. 8 refs.
Order from OTS or SLA $1.10 62-20259

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 143, no. 6, p. 1304-1307.
Another trans. is available from OTS or SLA $4.60 in 62-32446, JPRS-14888, 17 Aug 62 [44]p.

DESCRIPTORS: Automatic, Control, *Control systems, Theory, *Matrix algebra, *Inequalities, Real variables, Vector analysis.

The relations for stability of linear constant coefficients arising in the application of Lyapunov's Second Method are investigated. (Author)

Zubov, V. I.
QUESTIONS IN THE THEORY OF LYAPUNOV'S SECOND METHOD: THE CONSTRUCTION OF THE GENERAL SOLUTION IN THE DOMAIN OF ASYMPTOTIC STABILITY. Aug 62 [47]p. 8 refs.
Order from OTS or SLA $4.60 62-20253

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1955, v. 19 [no. 2] p. 179-210.

DESCRIPTORS: *Control systems, *Stability, Motion, Equations of motion, Differential equations, Real variables, Functions, Series.

This paper is the best source for "Zubov's Method", for constructing Lyapunov functions. It answers almost all theoretical questions concerning the concept of asymptotic stability. (Author)

Zwick, Walter.
SWITCHING PROCESS. [1962] 1p.
Order from OTS or SLA $1.10 63-10031

Trans. of German patent 478,666, cl. 21c, gr. 27, pat. from 5 Oct 27.

DESCRIPTORS: *Switching circuits, Design, *Panel boards (Electricity). Electric connectors.

A process is described for the establishment of connections on insulating bodies characterized by the fact that sections (areas) are cut out in a metal sheet (foil) which bound several areas serving as connections, which areas, however, still remain connected at several points, and that the separation is carried out at these points after the metal body has been mounted on an insulating body. (Author)

Mechanical Engineering

Becker, Kurt.
INVESTIGATION OF SOME PHENOMENA IN THE METALLIZING PROCESS (Untersuchungen über die Vorgange beim Flammspritzen). Doctoral Thesis, Polytechnic Inst. of Hannover, 1953. [1962] [47]p. 57 refs.
Order from SLA $4.60 62-18795

Trans. of reprint of Schweissen und Schneiden (West Germany) 1954, v. 6, no. 4, p. 127-142.

DESCRIPTORS: *Metal coatings, *Atomization, Microphotography, Experimental data, Test equipment.

Brunello, Domenico.
TIGHT JOINT FOR WATER PIPES, SEWER PIPES AND THE LIKE, tr. by J. B. 28 Feb 63, 3p. (figs. omitted).
Order from OTS or SLA $1.10 63-15764

Trans. of Italian patent 512,428, cl. XIII, appl. 14 Jan 54, granted 31 Jan 55, printed Sep 56.

DESCRIPTORS: *Rubber seals, Rings, *Pipes, *Joints, Design.

Dombrovskii, V. V. and Kaplan, M. Y.
DIE PROJEKTIERUNG VON HYDROGENERATOREN GROSSER LEISTUNG (The Projecting of Hydrogenerators of High Power). 10p.
Order from TIB $1.80

Trans. in German of Vestnik Elektropromyshlennosti (USSR) 1962, v. 33, no. 4, p. 11-15.

DESCRIPTORS: *Generators, Water.

Kaplan, M. P.
DETERMINATION OF OPTIMAL PARAMETERS FOR STEAM-GAS CYCLES [K Opredeleniyu Optimal'nykh Parametrov Parogazovykh Tsiklov) tr. by J. K. Skwirzynski. Aug 61 [17]p. 2 refs. [DSIR] NLL M. 3578.
Order from OTS or SLA $1.60 62-24682

Trans. of Teploenergetika (USSR) 1961, v. 8, no. 5, p. 6-11.
Other translations are available from FT $13.60 as FT-605 [1961] and from OTS or SLA $1.60 as 62-13923, RTS-2000, Jan 62 [13]p.

DESCRIPTORS: *Gas turbines, *Steam turbines, Turbines, Boilers, *Power plants, Effectiveness, Analysis, Feed water.

For abstract see Technical Translations 7: 651, 1962

Khutskii, G. I.
UTILISATION OF KINETIC ENERGY IN THE STAGES OF IMPULSE TYPE STEAM TURBINES. [1962] 11p. [DSIR] NLL M. 3577.
Order from OTS or SLA $1.60 62-24683

Trans. of Belorusskii Politekhn[icheskii] Inst[itut]. Sb[ornik] Nauchn[ykh] Rabot (USSR) 1957, v. 61, p. 175-190.

DESCRIPTORS: *Steam turbines, Turbines, Turbine parts, Dynamics, *Energy, Design, Effectiveness.

Mozharov, N. A. and Panasenko, M. D.
EVALUATION OF DEVICES FOR TAKING STEAM SAMPLES. [1962] 9p. (figs. tables omitted) 2 refs.
Order from OTS or SLA $1.10 63-15147

Trans. of Elektricheskie Stantsii (USSR) 1959, v. 30, no. 3 [p. 28-30].

DESCRIPTORS: *Steam turbines, Turbines, High pressure research, *Steam, Impurities, Sampling.

Duration of uninterrupted operation and its economy for contemporary powerful steam turbines of high and super-high pressure depend essentially on the purity of the steam fed to the turbine. (Author)

Prokhorov, F. G., Akilzin, P. A., and Schkrob, M.S.
FUNDAMENTAL PROBLEMS OF PREPARING FEED-WATER FOR POWER STATIONS IN THE CURRENT SEPTENNIAL: DISCUSSION. [1962] 16p. (tables omitted).
Order from OTS or SLA $1.60 63-15148

Trans. of Teploenergetika (USSR) 1960 [v. 7] no. 3, p. 3-8.

DESCRIPTORS: *Power plants (Establishments), *Feed water, Boilers, Turbines, Construction, Corrosion inhibition, Water, Purification.

The basic trends of development of water treatment on power stations in the current septennial are scrutinized. (Author)

Shubenko-Shubin, L. A.
SOME DESIGN SOLUTIONS FOR IMPORTANT SECTIONS OF HIGH POWERED TURBINE INSTALLATIONS WITH SUPER-CRITICAL STEAM PARAMETERS, tr. by J. K. Skwirzynski. Jan 62 [23]p. [DSIR] NLL M. 3571.
Order from OTS or SLA $2.60 62-24689

Trans. of Teploenergetika (USSR) 1960, v. 7, no. 2, p. 3-11.

DESCRIPTORS: *Steam turbines, *Turbine parts, Design, Construction, Operation, Turbines.

Some constructional solutions of the main and the exhaust parts as well as of the main steam channels of high powered turbines are considered; the turbine installations are with super-critical steam parameters. (Author)

Wolff, August and Klee, Adolf.
SEALING ARRANGEMENT FOR DETACHABLE PIPE JOINTS, IN PARTICULAR FOR AIR PIPES, tr. by J. B. 28 Feb 63, 3p. (figs. omitted).
Order from OTS or SLA $1.10 63-15768

Trans. of German patent 865,885, cl. 5d, gr. 1, pat. from 14 Sep 50, appl. announced 29 May 52, granting of pat. announced 24 Dec 52, pub. 5 Feb 53.

DESCRIPTORS: *Rubber seals, Rings, *Pipes, *Joints, Air, Design.

A sealing arrangement for detachable (insertion) joints of pipes, in particular of air pipes, with an elastic ring which is rolled up when the insertion end is inserted, is described. It is characterized in that a hollow rubber ring is shifted from a corrugation over a gradually increasing part of the corrugation into a second corrugation of larger diameter.

Ordnance, Missiles, and Satellite Vehicles

ON THE WAY TO MARS. 3 Jan 63, 6p. FTD-TT-62-1921.
Order from OTS or SLA $1.10 63-15555

Unedited rough draft trans. from Izvestiya (USSR) 1962, 16 Dec, p. 4.

DESCRIPTORS: *Space probes, *Mars probes, Design, *Space environmental conditions, Determination.

A popularized account of AIS Mars-I including the nature of the data being gathered, and diagrams and a photograph of the vehicle.

TRACKING OF MISSILES AND SPACE VEHICLES: REVIEW OF SOVIET LITERATURE. Rept. no. 19 on Soviet Developments in tracking missiles and Space Vehicles, Work Assignment no. 12. 21 Feb 63 [26]p. 36 refs. AID rept. P-63-24.
Order from OTS or SLA $2.60 63-15917

DESCRIPTORS: Reviews, *Tracking, Guided missiles, Satellites (Artificial), *Electromagnetism, Plasma physics, Ions, *Ionospheric disturbances, *Radio astronomy.

Contents:
Electromagnetic problems
Ion clouds and ionosphere perturbations
Radio astronomy.

Eneev, T. M., Platonov, A. K., and Kazakova, R. K.
THE DETERMINATION OF PARAMETERS FOR THE ORBIT OF AN ARTIFICIAL SATELLITE ACCORDING TO DATA OF GROUND MEASURINGS. Apr 62 [20]p. 4 refs.
Order from OTS or SLA $1.60 63-10168

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1960, v. 4, p. 43-55.
Another trans. is available free from Land-Air as LTS-4. When supply is exhausted order from OTS or SLA $2.60 as 61-19531, 15 Mar 61 [25]p.

DESCRIPTORS: *Satellite vehicle trajectories, Earth, *Orbital flight paths, Geophysics, Numerical analysis, Determination.

For abstract see Technical Translations 6: 180, 1961.

Gintsburg, M. A.
THE DOUBLE ELECTRICAL LAYER AT THE SURFACE OF A SATELLITE. 2 Jan 63, 25p. 11 refs. FTD-TT-62-1380.
Order from OTS or SLA $2.60 63-15546

Unedited rough draft trans. of A[kademiya] N[auk] SSSR. Institut Zemnogo Magnetizma, Ionosfery i Rasprostraneniya Radiovoln. Trudy, 1960, no. 17(27) p. 187-202.
Another trans. is available from ARS in Its Journal, v. 32, no. 11, $3.00.

DESCRIPTORS: *Electrical double layer, *Satellite vehicles, Surface properties, Satellite vehicle research, Magnetic fields, Ionosphere, Ions, Density, Electric fields, Drift, Thermodynamics, Statistical functions, Differential equations, Electric potential.
A satellite acquires a certain charge in the ionosphere, and accordingly a double electrical layer is formed at its surface. The interaction between the satellite and the ionosphere occurs "through" the double layer; the double layer determines the boundary conditions, and also affects the physical agents of the more complicated processes of ionospheric disturbance, the electron and ion beams formed by the satellite. Three equations describing the distribution of the electrical field in the double layer have been given in the literature. These equations differ, however, and lead to differing dependences of the potential upon the distance from the wall. The purpose of the present review is to indicate briefly the differences between these three theories and what they give when applied to a concrete problem of a satellite in the ionosphere.

Ivanov, Yurii.
ATMOSPHERE OF THE SPACE SHIP. 25 Oct 62 [6]p. FTD-TT-62-1545; AD-290 833.
Order from OTS or SLA $1,10. 63-15348

Unedited rough draft trans. from Sovetskaya Latviya (USSR) 1962, no. 194, 17 Aug.

DESCRIPTORS: *Spaceships, *Controlled atmospheres, Gases, Moisture, *Air conditioning equipment, *Temperature control.

Taratynova, G. P.
METHODS FOR THE NUMERICAL SOLUTION OF EQUATIONS IN FINITE DIFFERENCES AND THEIR APPLICATION TO THE CALCULATIONS OF THE ORBITS OF ARTIFICIAL EARTH SATELLITES. Apr 62 [38]p. 9 refs.
Order from OTS or SLA $3.60 63-10332

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1960, v. 4, p. 56-81.
Another trans. is available free from Land-Air as LTS-3. When supply is exhausted, order from LC or SLA mi$3.30, ph$7.80 as 61-19039, 15 Jan 61 [47]p.

DESCRIPTORS: Satellite vehicle trajectories, Equations, *Orbital flight paths, Numerical analysis, *Numerical methods and procedures.

For abstract see Technical Translations 5: 498, 1961.

Tipugin, V. N. and Veitsel', V. A.
RADIO CONTROL OF BALLISTIC ROCKETS, COSMIC ROCKETS AND EARTH SATELLITES. [1962] [54]p. 125 refs.
Order from OTS or SLA $5.60 63-10140

Trans. of mono. [Radioupravlenie (Radio Control) Moscow, 1962] chap. 10.
A trans. of complete mono. is available from OTS $9.00 as 62-11772, JPRS-15381, 21 Sep 62, 831p.

DESCRIPTORS: *Radio, Control, *Control systems, *Ballistics, *Rockets, *Satellite vehicles, Tracking, Trajectories, Doppler systems, Design, Remote control systems, *Guided missiles (Surface to surface).

Sanitation and Safety Engineering

U. S. S. R LITERATURE ON AIR POLLUTION AND RELATED OCCUPATIONAL DISEASES, VOL. 8. A SURVEY, by B. S. Levine. 1963 [287]p.
Order from OTS $4.00 63-11570

DESCRIPTORS: *Sanitary engineering, *Atmospheric pollution, *Industrial medicine, *Waste gases, Particles, Quantitative analysis, Standards, Diseases, Public health.

The topics covered in this collection of 56 translations include methods for the quantitative determination of contaminants in the air of industrial premises; standards for air-borne contaminants in workrooms; air quality measurements of specific contaminants; responses of people living at various distances from discharge sources; geographical and temporal variations of measurements of suspended or settled particulate matter; and human threshold responses to pollutants. (See also 62-11103)

Berdyugin, V. A.
THE CAUSES OF AN ACCIDENT WITH THE /HIGH-PRESSURE/ PIPELINES AT THE "KRASNOGORSKAYA" HYDRAULIC MINE (O Prichinakh Avarii Truboprovodov na Gidroshakhte Krasnogorskaya) tr. by L. Meyer. Jan 62 [6]p. S. M. R. E. Trans. no. 4649; [DSIR] NLL M. 3633.
Order from OTS or SLA $1.10 62-25274

Trans. of Bezop[asnost'] Truda v Promyshl[ennosti] (USSR) 1961, v. 5, no. 12, p. 8-11.

DESCRIPTORS: *Accidents, Mining engineering, Pipes, High pressure, Hydraulic pressure pumps.

Izyurova, A. I.
ANWENDUNG VON BIOLOGISCHEN METHODEN ZUR NACHREINIGUNG VON ROHÖLHALTIGEN ABWÄSSERN (Application of Biological Methods for the Aftertreatment of Waste Water Containing Crude Oil). 5p.
Order from TIB $1.20

Trans. in German of Gigiena i Sanitariya (USSR) 1958, v. 23, no. 2, p. 72-73.

DESCRIPTORS: Biology, *Chemical waste, Mineral oils

Keil, E. and Werner, H.
SAFETY BELTS FOR MOTOR VEHICLES. [1962] 13p. 2 refs.
Order from SLA $1.60 63-10275

Trans. of [ATZ] Automobiltechnische Zeitschrift (Germany) 1962, v. 64, no. 5, p. 149-152.

DESCRIPTORS: *Safety harness, *Passenger vehicles, Tests, Specifications, Mathematical prediction, Deceleration, Impact shock.

Requirements to be placed on safety belts are treated briefly, and the specifications for testing them are compared with corresponding foreign data. In addition, the results of numerous belt tests are described.

Leonov, P. A.
SICHERE VERFAHREN ZUM LÖSCHEN BRENNENDER BERGHALDEN (Effective Procedure for Quenching Burning Spoil Banks).
Order from TIB $1.10

Trans. from Izvestiya Vysshikh Uchebnykh Zavedenii. Gornyi Zhurnal (USSR) 1961, no. 2.

DESCRIPTORS: *Fire extinguishers, *Mining engineering

Petrov, V. P. and Seleznev, V. P.
COSMIC NAVIGATION. [1962] 16p. (1 fig. omitted).
Order from OTS or SLA $1.60 63-10071

Trans. of Priroda (USSR) 1962 [v. 51] no. 8, p. 14-23.

DESCRIPTORS: *Space navigation, Celestial navigation, *Inertial navigation, Automatic navigation, Gyro stabilizers, Errors, Design, *Hyperbolic navigation, Astronautics.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Food

Chukhar'ko, Z.
THE CONTINUOUS METHOD OF GRAIN PROCESSING AFTER HARVESTING (Potochnyi Method Posleuborochnoi Obrabotki Zerna). 26 Nov 62, 11p. Trans. A-1377.
Order from OTS or SLA $1.60 63-13230

Trans. of Ekonomika Sel'skogo Khozyaistva (USSR) 1962, v. 33, no. 8, p. 85-88.

DESCRIPTORS: *Cereals, Storage, Preservation, Processing, Driers (Apparatus), Cleaning.

Grimm, A. I. and Nikolaev, A. I.
MEASURES FOR THE CONTROL OF SPROUTING IN STORED POTATOES. [1962] [13]p. [DSIR] NLL M. 3687.
Order from OTS or SLA $1.60 62-25294

Trans. of Inst[itut] Sov[etskoi Torgovli]. Sbornik Nauch[nykh] Rabot (USSR) 1959, v. 13, p. 8-13.

DESCRIPTORS: Storage, *Potatoes, Ethanols, Carbamates, Acetic acids, Cooling.

Zagorul'ko, K.
DESIGNERS AND SPECIALIZATION IN FOOD-PROCESSING. USSR Industrial Development: Soviet Food-Processing Machinery No. 4. 12 Mar 63 [6]p.
JPRS: 18068.
Order from OTS $0.50 63-21301

Trans. from Ekonomicheskaya Gazeta (USSR) 1962, no. 46[67] p. 36.

DESCRIPTORS: *Food, Processing, *Machines, Industrial production, Containers.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

NEW DEGREASING MACHINE USING VOLATILE SOLVENTS. [1962] 9p. (figs. omitted).
Order from OTS or SLA $1.10 62-18545

Trans. of French patent 977,304, gr. 4, cl. 2, appl. 8 Nov 48, released 8 Nov 50, pub. 30 Mar 51.

DESCRIPTORS: *Machines, *Greases, *Cleaning, Solvents, Vaporization.

TURRET LATHE, tr. by G. E. 7 Dec 62, 8p. (figs. omitted).
Order from OTS or SLA $1.10 63-13743

Trans. of French patent 554,425, gr. 5, cl. 4, by Grau & Masurel, appl. 3 July 22, granted 1 Mar 23, pub. 11 June 23.

DESCRIPTORS: *Lathes, Power transmission belts, Taps, Drives, Positioning devices (Machinery), Feed mechanisms.

Ageev, I. Z.
DIE KOMMUTIERUNGSBEDINGUNGEN DER MASCHINEN MIT GROSSEM DREHZAHLBEREICH (Commutation Conditions for Wide-range Variable-speed Machines).
Order from TIB $2.80

Trans. in German of Elektrichestvo (USSR) 1960, no. 12, p. 61-69.

DESCRIPTORS: Machines, *Variable-speed drives, *Electric machinery, Commutators

Bede, J.
IMPROVEMENTS IN MACHINES FOR THE FEEDING OF BARS IN AUTOMATIC LATHES, tr. by L. A. N. 12 Feb 63, 27p. (figs. omitted).
Order from OTS or SLA $2.60 63-15775

Trans. of Belgian patent 558,616, by Machine Tools (Sales) Limited, London, appl. 22 June 57, granted 15 July 57, printed and pub. 8 Apr 60.

DESCRIPTORS: *Lathes, Automatic, *Machines, *Rods, Machining, Electric motors.

Brucher, Georges.
BELT-GRINDER. [1962] 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-10318

Trans. of unidentified Swiss patent, n.d.

DESCRIPTORS: *Grinder, *Belts, Design.

Gut, H.
SIMPLIFIED CALCULATION FOR THE STAMPING DIE CONTOUR FOR CIRCULAR RUBBER DISCS. [1961].
Order from TTIS $7.50 TTIS-2317

Trans. of Gummi, Asbest, Kunststoffe (West Germany) 1961, v. 14, July, p. 653-655.

DESCRIPTORS: *Dies, Configuration, Disks, *Rubber.

Levit, G. A. and Lur'e, B. G.
NEUE METHODE ZUR BERECHNUNG GERADLINIGER GLEITFUEHRUNGEN (A new Method to Calculate Straight-Line Radius Links). 13p.
Order from TIB $2.20

Trans. in German of Stanki i Instrument (USSR) 1962, v. 33, no. 1, p. 12-15.

DESCRIPTORS: *Machinery, *Tools

Maquet, Felix Anton.
MACHINE FOR THE MANUFACTURE OF BENT LEVERS FOR MECHANICAL FASTENING OF SPRING STOPPERS. [1962] 5p. (figs. omitted).
Order from OTS or SLA $1.10 62-18549

Trans. of French patent 323,499, appl. 5 Aug 02, presented 11 Nov 02, pub. 7 Mar 03.

DESCRIPTORS: *Machines, Small tools, Fastenings, *Seals (Stoppers), Springs.

Nakamura, Yoshikore.
REMOVAL OF ASHES FROM FILTERING PAPER. [1962] [5]p.
Order from OTS or SLA $1.10 62-16330

Trans. of Japanese patent 32,311 (1918) cl. 68, appl. 6 Oct 18, granted 5 Mar 19.
Another trans. is available from OTS or SLA $1.10 as 62-10662 [1961] 4p.

DESCRIPTORS: *Filter papers, Ash, Minerals, Disposal, Reagents.

Schattanik, Heinrich.
REGISTER CONTROL FOR PROCESSING MACHINES FOR PAPER OR OTHER WEB MATERIALS, ESPECIALLY FOR CROSS-CUTTERS, tr. by J. R-P. 9 Nov 62, 10p. (figs. omitted) 1 ref.
Order from OTS or SLA $1.10 63-13428

Trans. of German Auslegeschrift 1,022,669, cl. 21c 62/62. internat. cl. H 02p, by Natronzellstoff-und Papierfabriken A. G., appl. 17 Dec 53, appl. announced and laid open to inspection 16 Jan 58.

DESCRIPTORS: *Cutting tools, Machines, *Control systems, Paper, Processing, *Photoelectric cells.

Yakunin, G. I.
INCREASING THE LIFE OF HIGH-SPEED CUTTING TOOLS BY SUPPLYING GASEOUS OXYGEN TO THE CUTTING ZONE. [1962] 3p. 2 refs.
Order from OTS or SLA $1.10 62-20047

Trans. of Stanki i Instrument (USSR) 1955 [v. 26] no. 4, p. 21-22.

DESCRIPTORS: *Cutting tools, Life expectancy, Gas flow, *Oxygen, Surfaces, Friction

Engines and Propulsion Systems

Astafiev, A. N.
EINIGE ERGEBNISSE VON EXPERIMENTAL-UNTERSUCHUNGEN AN WASSERABSCHEIDERN FUER DAMPFTURBINEN (Some Results of Experiments with Water Separators for Steam Turbines). 4p.
Order from TIB $1.10

Trans. inGerman of Energomashinostroenie (USSR) 1960 [v. 6] no. 2, p. 32-33

DESCRIPTORS: Experimental data, *Water, Separation, *Steam turbines

Budnyazkii, D. M.
DIE BESTIMMUNG DES GUENSTIGSTEN ENDDRUCKES FUER KONDENSATIONSTURBINEN-ANLAGEN (Determination of the Optimum End-thrust for Condensation-turbine Systems). 14p.
Order from TIB $2.35

Trans. in German of Teploenergetika (USSR) 1962 [v. 9] no. 4, p. 37-42.

DESCRIPTORS: *Pressure, Condensation, *Turbines.

Duel, M. A. and Marenko, A. F.
AN- UND ABFAHREN EINES 50 MW-BLOCKS UNTER VERWENDUNG EINER STEUERNDEN RECHENMASCHINE (Starting and Departing of a 50 MW-block by Using a Steering Computer). 14p.
Order from TIB $2.35

Trans. in German of Teploenergetika (USSR) 1962 [v. 9] no. 7, p. 18-22.

DESCRIPTORS: *Starting, *Computers, Automation.

Frolov, K. V.
SOME PROBLEMS IN STRAIN-GAUGE MEASUREMENTS ON THE MOVING BLADES OF TURBO MACHINES. [1962] [12]p. 4 refs. C. E. Trans. 2705; [DSIR] NLL M. 8979.
Order from OTS or SLA $1.60 63-15189

Trans. of Energomashinostroenie (USSR) 1962, v. 8, no. 4, p. 33-37.

DESCRIPTORS: *Steam turbine blades, *Turbine parts, Tensile properties, Thermal stresses, Measurement, Strain gages.

Gadefelt, G. R.
ROCKET PROPULSION DEVICE, tr. by J. R. -P. 10 Dec 62, 6p. (figs. omitted).
Order from OTS or SLA $1.10 63-13756

Trans. of Swedish patent 137,341, cl. 46 g:3, appl. filed 15 Mar 49, granted 3 July 52, pub. 16 Sep 52.

DESCRIPTORS: *Rocket motors (Solid propellant), Rocket propellant grains, *Rocket fuzes, Design, *Rocket propulsion.

Grabe, B.
ROCKET MOTOR EXHAUST NOZZLE, tr. by J. R. -P. 10 Dec 62, 6p. (figs. omitted).
Order from OTS or SLA $1.10 63-13755

Trans. of Swedish patent 125,951, cl. 46 g:10, internat'l cl. F 02 k, by Försvarets Forskningsanstalt, appl. filed 7 Aug 48, granted 30 June 49, pub. 16 May 61.

DESCRIPTORS: *Rocket motor nozzles, *Rocket motors (Solid propellant), Design, Operation, *Exhaust nozzles.

Kipfer, Paul.
TWO-STROKE INTERNAL COMBUSTION ENGINE WITH EXHAUST-DRIVEN TURBOBLOWER AND SLEEVE VALVE CONTROL, tr. by J. B. 12 Feb 63, 14p. (figs. omitted).
Order from OTS or SLA $1.60 63-15767

Trans. of German patent 684,332, cl. 46f, gr. 5/01, pat. from 3 Oct 34, granting of pat. announced 2 Nov 39, pub. 25 Nov 39.

DESCRIPTORS: *Internal combustion engines, *Sleeve valves, *Turbo superchargers, Turbines, Design.

Kopp, I. Z.
DESIGNING AN EFFICIENT FLANGE JOINT FOR STEAM TURBINE CASINGS. [1962] [8]p. 5 refs. C. E. Trans. 2606; [DSIR] NLL M. 8976.
Order from OTS or SLA $1.10 63-15183

Trans. of Energomashinostroenie (USSR) 1961, v. 7, no. 12, p. 25-26.

DESCRIPTORS: Flanges, *Joints, *Steam turbines, Thermal stresses, Design.

The disadvantages of existing designs and methods of calculating the stresses in flange joints for turbine casings are considered. A simplified design for the shape of the flange joint is proposed which is more efficient since it reduces the bending and thermal stresses. (Author)

Kostyuk, A. G.
TEMPERATURE FIELD OF A TURBINE DISC [Temperaturnoe Pole Turbinnogo Diska]. [1961] 18p. 8 refs. MDF K 140.
Order from OTS or SLA $1.60 62-23080

Trans. of A[kademiya] N[auk] SSSR. Otd[elenie] T[ekh]nicheskikh] Nauk. Izvestiya, 1954, no. 6, p. 25-36.

DESCRIPTORS: *Turbine wheels, Cooling, Temperature, *Heat transfer, Equations, Bessel functions.

The influence of certain fundamental factors - disc shape, heat exchange condition, flux of cooling air - on the character of the temperature field of the disc is analyzed on the basis of an analysis of a number of solutions obtained for problems on the temperature distribution in cooling a turbine disc. (Author)

Larionov, A. N., Mastyaev, N. Z. and others.
GENERAL THEORY OF HYSTERESIS ELECTRIC MOTORS, tr. by Lydia Venters. Dec 61, 15p.
Order from OTS or SLA $1.60 AEC-tr-4972

Trans. of Elektrichestvo (USSR) 1958, no. 7, p. 1-6. Another trans. is available from OTS or SLA $1.60 as 62-23897, DSIR NLL M. 3321 [1962] 18p.

DESCRIPTORS: *Electric motors, *Hysteresis, Theory Operation, Torque, Magnetic properties, Permeability (Magnetic), Magnetic moments

The present paper describes the field distribution law in the motor rotor taking into account the rotational hysteresis for the most general case: a loaded motor of a normal or reversed performance with a rotor, which has an inner (magnetic or nonmagnetic) bushing or rim.

Levin, V. Y.
SOME PROBLEMS OF PULSATING COMBUSTION IN CONNECTION WITH THE PULSATION TURBINE (Nekotore Voprosy Pul'siruyushchego Sgoraniya v Svyazi s Problemoi Pul'siruyushchei Turbiny). Apr 61 [15]p. 3 refs. T. I. L. /T. 5187; [DSIR] NLL M 3390.
Order from OTS or SLA $1.60 62-25352

Trans. of Belorusskii Politekhn[icheskii] Inst[itut]. Sborn[ik] Nauch[nykh] [Rabot] (USSR) 1957, v. 56, p. 316-332.

DESCRIPTORS: Turbines, *Gas turbines, Gas turbine nozzles, *Combustion chambers, Numerical analysis, Thermodynamics, Vibration.

Petrov, P. N., Rabinovich, V. P., and Khinskii, P. D.
THE EFFECT OF NON-METALLIC INCLUSIONS ON THE STRENGTH OF TURBINE DISCS. [1962] [10]p. 7 refs. C. E. Trans. 2651; [DSIR] NLL M. 8890.
Order from OTS or SLA $1.10 63-15185

Trans. of Energomashinostroenie (USSR) 1961, v. 7, no. 11, p. 27-30.

DESCRIPTORS: *Turbine parts, Disks, *Rotor blades (Turbomachinery), *Quality control, Standards, Tests, Test methods, Ultrasonic equipment.

Precoul, Michel
JET PROPULSION DEVICE, tr. by J. B. 29 Jan 63, 12p. (figs. omitted).
Order from OTS or SLA $1.60 63-15442

Trans. of French patent 1,058,495, gr. 6, cl. 4, by Société Technique de Recherches Industrielles et Mécaniques, appl. 18 Jun 52, granted 4 Nov 53, pub. 16 Mar 54.

DESCRIPTORS: *Jet propulsion, *Propellants, Jet engines, Design, Propulsion.

Tretyakov, P. G.
VERSUCHE MIT DEM ANFAHREN DER WPT-50-3-TURBINE MIT KOMBINIERTER VORWÄRMUNG (Starting Tests of the WPT-50-3-Turbine with Combined Preheating). 10p.
Order from TIB $1.80

Trans. in German of Teploenergetika (USSR) 1962 [v. 9] no. 7, p. 42-46.

DESCRIPTORS: *Starting, *Tests, *Turbines, Heat treatment.

Tyryshkin, V. G.
ON THE QUESTION OF CHOOSING THE METHOD OF DESIGNING THE BLADE LENGTH OF TURBINE STAGES [K Voprosu o Vybore Metoda Proektirovaniya Dlinnykh Lopatok Turbinnoi Stupeni]. [1961] 13p. MDF T 123.
Order from OTS or SLA $1.60 62-23200

Trans. of A[kademiya] N[auk] SSSR. Otdel[enie] Tekh[nicheskikh] Nauk. Izvestiya, 1954, no. 6, p. 37-44.

DESCRIPTORS: *Gas turbines, *Turbine blades, Gas turbine blades, Design, Aerodynamic configurations, Cylindrical bodies, Fluid flow.

At the present time, a number of so-called "aerodynamic" methods is known which permits taking into account the actual distribution of the flow parameters in separate characteristic sections of gas-turbine stages (in front of the guide vanes, in the gap between the guiding and operating vanes and outside the operating wheel) and, therefore, estimating the efficiency of the blades. Characteristic of these methods is the use, in deriving computational formulas, of the equations of continuity, and energy for a stream tube element and also the equilibrium condition of an elementary volume of gas in the radial direction. Here, the motion of the working fluid is assumed steady and axisymmetric relative to the control sections listed above. (Author)

Vanicek, Viktor.
DRIVING TURBINE, IN PARTICULAR FOR EXHAUST-DRIVEN TURBOSUPERCHARGER, tr. by J. B. 14 Feb 63, 6p. (figs. omitted).
Order from OTS or SLA $1.10 63-15778

Trans. of Austrian patent 168,357, cl. 46f appl. 7 June 48, beginning of pat. term 15 Nov 50, pub. 25 May 51.

DESCRIPTORS: *Turbines, Duct inlets, *Turbosuperchargers, Internal combustion engines, Design.

Zhukovskii, M. I., Sknari, N. A. and others.
DIE UNTERSUCHUNG UND AERODYNAMISCHE VERVOLLKOMMNUNUNG DER PROFILGITTER DER LETZTEN STUFE EINER TURBINE VOM TYP K-300-240 DES KIROV-WERKES CHGTS (Examination and Aerodynamic Perfection of the Profile Lattice at the Last Stage of a Turbine of Type K-300-240 from Kirov-works CHGTS). 11p.
Order from TIB $2.00

Trans. in German of Teploenergetika (USSR) 1962 [v. 9] no. 4, p. 32-36.

DESCRIPTORS: *Aerodynamics, *Turbines, Industrial plants.

Machine Parts and Mechanisms

SCREW CLAMPS FOR THE INSERTION AND REMOVAL OF FASTENING PINS, PARTICULARLY IN THE REPLACEMENT OF LATCHES. [1962] 2p. (figs. omitted).
Order from OTS or SLA $1.10 62-18450

Trans. of German patent 311,712, 7 Apr 19, cl. 87 a, gr. 2, pat. from 24 Apr 18, by High Voltage Apparatus Manufacturing Co.

DESCRIPTORS: *Clamps, *Pins (Mechanical), *Fastenings, Screws.

Dvoryanov, P. A.
THE EFFECT OF NONMETALLIC INCLUSIONS ON FATIGUE FAILURE IN HARDENED ShKh15 STEEL (Vliyanie Metallicheskikh Vklyuchenii v Zakalennoi Stali ShKh15 na Ustalostnoe Vykrashivanie). [1962] [27]p. (foreign text included) 2 refs.
Order from OTS or SLA $2.60 62-20457

Trans. of Podshipnik (USSR) 1953, no. 5, p. 13-19.

DESCRIPTORS: *Ball bearings, *Roller bearings, *Steel, Hardness, Impurities, Fatigue (Mechanics), Failure (Mechanics), Stresses

The purpose of the present work is to establish the relationship between the size, shape and nature of nonmetallic inclusions and fatigue failure of hardened ShKh15 ball-bearing steel with hardness R_C = 61 to 65, under alternating stress.

Rabotnikov, Yu. N.
ON THE STRENGTH OF TURBINE DISCS UNDER CONDITIONS OF CREEP. [1962] 16p. 6 refs. C. E. Trans. 2235; [DSIR] NLL M. 4883.
Order from OTS or SLA $1.60 62-25383

Trans. of Akad[emiya] Nauk SSSR. [Otdelenie Tekhnicheskikh Nauk]. Izvest[iya]: Mekh[anika] i Mash[inostroenie] 1959, no. 4, p. 93-100.

DESCRIPTORS: *Turbine parts, *Disks, *Creep, Tests, *Stresses, *Deformation, Failure (Mechanics), Pearlite, Austenite, Nickel alloys.

Rateau, Auguste.
ADJUSTABLE SPRAY NOZZLE, tr. by F. H. B. 19 Feb 63, 2p. (figs. omitted).
Order from OTS or SLA $1.10 63-15773

Trans. of French patent 330,083, gr. II, cl. 2, appl. 9 Mar 03, granted 18 June 03, pub. 11 Aug 03 (priority claimed, based on appl. filed in Belgium 14 Mar 02).

DESCRIPTORS: *Spray nozzles, Design.

Shil'krut, D. I., Rukin, V. V. and others.
A MECHANICAL VIBRATOR WITH INDEPENDENT ADJUSTMENT OF AMPLITUDE AND FREQUENCY (Mekhanicheskii Vibrator s Nezavisimoi Regulirovkoi Amplitudy i Chastoty) tr. by R. J. Zatorski. 1962 [5]p. (foreign text included) 2 refs. [CSIRO] Trans. no. 5646; [DSIR NLL M. 4985].
Order from OTS or SLA $1.10 63-19226

Trans. of Vestnik Mashinostroeniya (USSR) 1958, v. 38, no. 6, p. 63-64.

DESCRIPTORS: *Cutting tools, Saws, *Vibrators (Mechanical), Design, Oscillation, Frequency, Control.

Thomas, Werner.
HYDROSTATIC AXIAL PISTON TRANSMISSION WITH INTERNALLY DIVIDED POWER FLOW. [1962] [16]p.
Order from SLA $1.60 62-18961

Trans. of VDI Berichte (West Germany) 1958, v. 29, p. 143-148.

DESCRIPTORS: *Hydraulic systems, Pumps, Hydraulic power systems, *Pistons, *Transmissions, Power supplies, Fluid flow.

Troost, A., Grofkes, H., and Hölling, K.
ROLL FLATTENING DURING THE ROLLING PROCESS. Feb 63.
Order from BISI £3 15s BISI-3042

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 14] p. 957-963.

DESCRIPTORS: *Rolling mills, *Deformation, Mathematical analysis, Elasticity.

Manufacturing Equipment and Processes

ABRASIVE OBJECT AND METHOD FOR ITS MANUFACTURE. [1962] 11p. (figs. omitted).
Order from OTS or SLA $1.60 62-20419

Trans. of French patent 1, 284, 723, appl. no. 851, 256, filed 31 Jan 61, gr. 8 Jan 62, by The Carborundum Co., U. S. A. (pub. in Bull[etin] Off[iciel] de la Propriéte Industrielle (France) 1962, no. 7).

DESCRIPTORS: *Abrasives, *Manufacturing methods, Textiles, Fibers, Sheets, Adhesion, Pressure, Polymers, *Grinding wheels.

The invention concerns composite abrasive objects formed of several layers of a flexible fibrous sheet that is coated with an abrasive, these layers, being united and combined by an adhesive under pressure to form an abrasive body in one single piece; these objects have the desired dimension and shape, like wheels and poshing disks, grinding wheels and disks, blocks, rods and other various abrasive shapes. (Author)

DEVICE FOR PRECISION-MEASURING OF RECTILINEAR AND CIRCULAR DISPLACEMENTS AND DIMENSIONS. [1962] 6p. (figs. omitted).
Order from OTS or SLA $1.10 62-18554

Trans. of French patent 882, 127, gr. 12, cl. 3, appl, 18 May 42, released 15 Feb 43, pub. 18 May 43, by Etablissements Guicherd and Mr. Louis-Alain-Daniel Filliol.

DESCRIPTORS: *Precision equipment, Measurement, Instrumentation.

PERFECTED ABRASIVE PRODUCT AND ITS METHOD OF MANUFACTURE. [1962] 2p.
Order from OTS or SLA $1.10 62-20006

Trans. of French patent 1, 284, 995, filed 27 Mar 61, by Norton Co.

DESCRIPTORS: *Abrasives, Manufacturing methods, Binders, Epoxy resins, Stabilization.

Bogdanovskii, M. N. and Repkina, V. I.
VORGÄNGE AN DER GRENZE METALL-FORM (Processes on Metal-mold Boundary). 9p.
Order from TIB $1.70

Trans. in German of Liteinoe Proizvodstvo (USSR) 1960, no. 12, p. 30-32.

DESCRIPTORS: *Metals, *Molding.

Bolshakov, I. F. and Svyatkin, B. K.
EINE AUTOMATISCHE FLIESSSTRASSE ZUM FORMEN, ZUSAMMENSETZEN UND AUSSCHLAGEN VON GUSSSTUECKEN (Automatic Line for Molding, Assembling and Shakeout of Castings). 8p.
Order from TIB $1.55

Trans. in German of Liteinoe Proizvodstvo (USSR) 1960, no. 1, p. 16-19.

DESCRIPTORS: *Automation, *Molding, *Castings.

Crome, R.
THE DETERMINATION OF THE OPTIMUM DEGREE OF DEFORMATION IN THE COLD DRAWING OF TUBES. Mar 63.
Order from BISI £2 5s BISI-3131

Trans. of Verein Deutscher Ingenieure. Zeitschrift (West Germany) 1962, v. 104 [no. 18] p. 817-819.

DESCRIPTORS: *Deformation, Cold-working, *Drawing (Machine processing), *Pipes, Stresses, Determination.

Drees, H. and Jentsche, A.
BORING OF CAST IRON WITH HARD METAL SPIRAL DRILLS; AN APPROVED NOVEL TECHNIQUE (Das Gussbohren mit Hart-metall-Spiralbohrern - ein Erprobtes Neuererverfahren). [1962] [14]p. (foreign text included) 4 refs.
Order from SLA $1.60 62-18923

Trans. of Maschinenbau (Germany) 1960, v. 9, no. 12, p. 362-365.

DESCRIPTORS: *Drills, Metals, Hardness, Iron alloys, Castings, Design, Maintenance, Operation, Drilling machines.

Evlanov, N. G., Rynskii, I. M. and Kuleshov, M. Ya.
MANUFACTURING OF PANELS BY A METHOD OF LOCALIZED DIE FORGING. 30 Jan 63 [4]p. AID rept. S-63-19; NASA N63-12688; AD-297 357.
Order from OTS or SLA $1.10 63-15725

Review trans. of Kuznechno-Shtampovochnoe Proizvodstvo (USSR) 1962 [v. 4] no. 11, p. 1-5.

DESCRIPTORS: Production, *Panels (Structural), *Forging, Material forming, *Manufacturing methods, Dies

Gorshkov, A. A.
GIESSEREIINSTITUT DER UKRAINISCHEN AKADEMIE DER WISSENSCHAFTEN (Foundry Production Institute of the Ukrainian Academy of Sciences). 11p.
Order from TIB $2.00

Trans. in German of Liteinoe Proizvodstvo (USSR) 1960, no. 1, p. 46-48.

DESCRIPTORS: *Casting, Production

Grechukhin, A. I.
ON THE PROBLEM OF METHODS OF ESTIMATING THE CUTTING EDGE SHARPNESS OF CUTTING TOOLS (K Voprosu o Metodakh Otsenki Ostroty Rezhushchei Kromki Instrumenta). Oct 62 [5]p. RTS 2162.
Order from OTS or SLA $1.10 63-15268

Trans. of Stanki i Instrument (USSR) 1949, [v. 20] no. 5, p. 21-22.

DESCRIPTORS: Measurement, *Cutting tools, Test methods. Surgical instruments, Razors, Physical properties.

Jandros, F., Hrabe, J., and Weinfurter, F.
HERSTELLUNG VON SCHLEUDERRADSCHAUFELN AUS WEISSEM TEMPERGUSS (Production of Fan-blower Blades from White-heart Malleable Iron). 5p.
Order from TIB $1.20

Trans. in German of Slevarenstvi (Czechoslovakia) 1961, v. 9, no. 9, p. 332-333.

DESCRIPTORS: Production, *Fans, *Blowers, *Rotor blades, Iron castings

Kunz, H. G.
THE SUITABILITY OF VARIOUS FUEL GASES FOR OXYGEN-CUTTING. [1962] [27]p.
Order from SLA $2.60 62-20058

Trans. from Mitteilungen der B E F A (West Germany) 1954, no. 9.

DESCRIPTORS: *Fuels, *Gases, *Oxygen, *Cutting torches, *Acetylenes, *Propanes, *Hydrogen, Effectiveness, Combustion, Oxidation, Thermodynamics, Design, Economics.

The application of various fuel gases to flame cutting was subjected to a critical examination, and from their combustion properties and their behavior during cutting a quantitative evaluation was worked up. It was shown that the properties of the gases exert an important influence not only on the preheating, but also on the heat balance of the whole cutting process and, therefore, on the oxidation process. The performance data obtained from plant observations and tests, which reflect the modern state of development of flame cutting, provide a useful basis for the quantitative evaluation of the fuel gases. By taking into account prevailing gas costs and wages, a picture of the economic relationships was obtained, which showed that acetylene is the most economical fuel gas, while propane, hydrogen, and city gas are considerably less advantageous. (Author)

Leshchenko, V. P., Fimina, T. G., and Mayorova, L. I.
VERWENDUNG EXOTHERMISCHER MASSEN ZUR ERWÄRMUNG DER VERLORENEN KÖPFE BEIM NE-PROFILGUSS (Exothermic Mixes for Heating Risers in Non-ferrous Castings). 3p.
Order from TIB $0.95

Trans. in German of Liteinoe Proizvodstvo (USSR) 1960, no. 1, p. 3.

DESCRIPTORS: Mixtures, *Heating, *Castings.

Ninburg, A. K.
THE EFFECT OF OXYGEN PURITY ON THE FLAME GROOVING PROCESS. [1962] [18]p. 2 refs.
Order from OTS or SLA $1.60 62-20161

Trans. of Avtogennoe Delo (USSR) 1951, v. 22 [no. 10] p. 13-16.

DESCRIPTORS: *Oxygen, Impurities, *Cutting torches, Effectiveness, Experimental data.

Oxygen purity has a substantial effect on the oxygen groove cutting process. Oxygen groove cutting on ordinary low carbon steel is impossible when the oxygen purity is less than 95%. For each grade of oxygen purity, there is an optimum cutting speed which corresponds to maximum cutting efficiency and minimum specific oxygen consumption. When, in the purity range of 99.5% to 97.0%, the oxygen purity is lowered by 1%, the dimensions of the resulting grooves and the cutting conditions are changed. (Author)

Oiks, G. N. and Sokolov, G. A.
MÖGLICHKEITEN ZUR HERSTELLUNG VON BLÖCKEN MIT VERSCHWEISSBAREN LUNKERN (Possibilities of Producing Ingots with Weldable Pipes).
Order from TIB $1.10

Trans. in German of Izvestiya Vysshikh Uchebnykh Zavedenii. Chernaya Metallurgiya (USSR) 1961, no. 3, p. 37-39.
Another trans. is available in English from HB $3.80 as HB-5167, June 61, 1300 words.

DESCRIPTORS: *Castings, Welding, *Pipes.

Pol', V. [G.]
IMPFEN VON GUSSEISEN BEIM HALBSTRANGGIESSEN VON ROHREN (Cast Iron Modification in Semicontinuous Pipe Casting). 3p.
Order from TIB $0.95

Trans. in German of Liteinoe Proizvodstvo (USSR) 1960, no. 12, p. 41-42.

DESCRIPTORS: *Cast iron, Casting, *Pipes.

Schulz, H.
FLAME CUTTING WITH PROPANE. [1962] [33]p. 12 refs.
Order from SLA $3.60 62-20196

Trans. from Mitteilungen der B E F A (West Germany) 1951, no. 1.

DESCRIPTORS: *Propanes, *Cutting torches, Acetylenes, Oxygen, Tests, Economics, Thermodynamics, Effectiveness, Combustion, Oxidation.

The object of the present investigation was the classification of the hitherto little known fundamentals of propane cutting, and to obtain information regarding the importance of propane as compared to the generally known use of acetylene. The tests covered a cutting range of 10 to 300 mm plate thickness, which is representative of commercial practice. The best known

domestic burner makes were used for making cuts of lm lengths. Based on the measurements of cutting time; fuel gas and oxygen consumption, and taking into consideration existing wage and price conditions, economic comparisons were made. The influence of transportation weights was touched upon. It was found that because of the shorter cutting time and the lower oxygen consumption, which are the most important factors for total costs of flame cutting, acetylene is far superior to propane. Since propane can be used for welding only to a very limited extent, it cannot attain the position now occupied by acetylene. (Author)

Shirokikh, I.
GRAPHISCHE DARSTELLUNG DER MECHANISIERUNG UND IHRER RENTABILITÄT (Graphical Representation of the Mechanization and its Productiveness). 4p.
Order from TIB $1.10

Trans. in German of Slevarenstvi (Czechoslovakia) 1961, v. 9, no. 5, p. 168-170.

DESCRIPTORS: *Conformal mapping, *Automation, Industrial production.

Suwalski, Roman.
ULTRASONIC MACHINING [Obrobka Ultradzwiekowa]. [1962] 30p.
Order from K-H $37.50 K-H 9905

Trans. of [Mechanik (Poland) 1958, v. 31, no. 8/9, p. 406-411].
Another trans. is available from SLA mi$2.70, ph$4.80 as 60-18110 [1960] [26]p.

DESCRIPTORS: *Machining, *Cutting tools, *Ultrasonics, Ultrasonic equipment.

For abstract see Technical Translations 4: 572, 1960.

Teichmann, Heinz and Kogl, Franz.
SURFACE DETERMINATION OF ABRASIVE GRAINS AND ITS IMPORTANCE IN THE MANUFACTURE OF ABRASIVE BODIES. 9 Jan 63, 8p. 6 refs.
Order from SLA $1.10 63-10652

Trans. of German language article from unidentified source, n d.

DESCRIPTORS: *Abrasives, Bonding, Surface area, Particle size, Measurement, Production.

The determination of specific surface area according to the method of Gosta Ringqvist is applied to the examination of abrasive grain. The method proves to be well suited for operating purposes, and reproducibility corresponds to requirements in practice. To maintain a uniform quality, particularly in abrasive body hardness, it is necessary to check variations in grain surface area in production, and to correct the production technology accordingly.

Teterin, E. V.
SPEZIALISIERUNG DER GIESSEREIEN AUF DEN PRÄZISIONSGUSS (AUSSCHMELZBARE MODELLE) IN DER SERIENERZEUGUNG (Specialisation of Investment Castings Foundries). 4p.
Order from TIB $1.10

Trans, in German of Liteinoe Proizvodstvo (USSR) 1960, no. 1, p. 2.

DESCRIPTORS: *Castings, Production.

Timofeev, V. G.
KONTINUIERLICHES GIESSEN VON GUSSEISERNEN MIKRODRÄHTEN IN GLASISOLATION (Continuous Production of Micro Section Cast Iron Wire in Glass Insulation). 8p.
Order from TIB $1.55

Trans. in German of Liteinoe Proizvodstvo (USSR) 1960, no. 1, p. 10-12.

DESCRIPTORS: *Cast iron, Production, *Wire, Glass, *Insulating materials.

Werth, S.
METHODS FOR MEASURING AND PRODUCTION OF BORES OF WIRE, WITH PREDETERMINED ROUNDING-OFF RADII AND BEARING LENGTHS. [1962] 9p. (figs. tables formulae omitted).
Order from SLA $1.10 63-10005

Trans. of Stahl und Eisen (West Germany) 1952, v. 72, no. 2, p. 66-69.

DESCRIPTORS: Measurement, Production, *Boreholes, *Wire, Dies, Drawing (Machine processing).

Differences in dimensions in the use of conical test needles for the determination of the cylindrical bearing length z in drawing tools obtained from measuring values of both the angular drawing bore and the final form with rounded off edges make it possible, on the basis of geometrical derivations to determine the rounding-off radii and thus the actual length z. Thus the pre-determined bearing length and the rounding-off radii desired may be checked and maintained, on a shop basis, in an inexpensive manner, using intermediate measurements during the production of the drawing bore. Checking of radii when the drawing tools are finished is not possible without knowledge of pre-determined dimensions. A standard form containing records with respect to the drawing bore measured may simultaneously serve for notes in plant experiments which facilitate the determination of optimum drawing bores which will suit the individual requirements of each plant and furnish data for its most economical production. (Author)

[MECHANISM FOR THE REMOVAL OF PLAY OF THE BRAKE-ROD IN POWER-DRIVEN VEHICLES]; COMPLAINT AGAINST THE DECISION RENDERED 13 MAY 33. [1962] 5p. (figs. omitted) 6 refs.
Order from OTS or SLA $1.10 62-20479

Trans. of complaint against patent German application 124 032, II/63 c, gr. 53 X, by Robert Bosch A. G., 8/18/33.

DESCRIPTORS: *Brakes, *Vehicle chassis components, Patents, Drives.

Demidov, V. P.
GAS TURBINE LOCOMOTIVES. [1962] 9p.
Order from OTS or SLA $1.10 63-10649

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 7] p. 90-94.

DESCRIPTORS: *Gas turbines, *Locomotives, Railroad cars, Railroads, Operation, Economics.

Dobrosielskii, K. M.
PROSPECTS OF IMPROVED TECHNIQUE AND TECHNOLOGY IN A HUMP YARD. [1962] 5p.
Order from OTS or SLA $1.10 63-10637

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 7] p. 32-34.

DESCRIPTORS: *Remote control systems, Economics, Television communication systems, *Railroads, Electronic equipment, Electric switches.

Ernst, H.
CRANE INSTALLATIONS OF LOW DEAD WEIGHT MADE SAFE IN OPERATION BY APPROPRIATE DESIGN. Mar 63.
Order from BISI £5 5s BISI-3127

Trans. of Stahl und Eisen (West Germany) 1961, v. 81 [no. 24] p. 1665-1672.

DESCRIPTORS: *Hoists, Design, Weight, *Safety, Maintenance, Bridges.

Götzlinger, J. and Norling, N.
GUIDE FOR MATERIAL-STACKING CRAB, tr. by F. H. B. 27 Feb 63, 4p. (figs. omitted).
Order from OTS or SLA $1.10 63-15713

Trans. of Swedish patent 158, 621, cl. 35b, 1/04, by Allmänns Svenska Elektriska AB, appl. 15 Sep 55, granted 14 Feb 57, pub. 16 Apr 57.

DESCRIPTORS: *Fork-lift vehicles, *Hoists, Handling, Materials, Warehouses, Design, Operation.

The invention concerns a guide for a material-stacking crab provided with a lifting element which is controlled by a fixed pair of guides and one or more successively mounted vertically movable pairs of guides which are lifted or lowered together with the lifting element, characterized in that the lengths and speeds of the movable guides with relation to the lifting element are adapted so that the lower edge of the lifting element as well as the lower ends of the movable guide pair pass approximately at the same time the lower end of the fixed guide pair. (Author)

Gridyushko, V. I.
IMPROVING THE RUNNING MAINTENANCE OF FREIGHT CARS. [1962] 7p.
Order from OTS or SLA $1.10 63-10645

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 6] p. 51-56.

DESCRIPTORS: *Railroad cars, Maintenance, Management engineering, Railroads.

Hennig, W.
DEVELOPMENTS IN INGOT TRANSFER CARS. Mar 63.
Order from BISI £2 10s BISI-3126

Trans. of Stahl und Eisen (West Germany) 1960, v. 80 [no. 8] p. 534-536.

DESCRIPTORS: *Cargo vehicles, Rolling mills, *Castings.

Kalishchuk, A. G. and Avstreikh, A. S.
IMPROVED METHODS OF LOADING VEHICLES, MACHINES AND PARTS ON FLATCARS. [1962] 3p.
Order from OTS or SLA $1.10 63-10640

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 6] p. 76-78.

DESCRIPTORS: *Railroad cars, Handling, Vehicles, Machines, Railroads, *Cargo.

Kartamyshev, A. I., Shmukler, M. M., and Yakub, S. K.
INCREASED EFFICIENCY OF DIRECTING THE CAR FLOW TO PARALLEL ROUTES. [1962] 6p.
Order from OTS or SLA $1.10 63-10646

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 6] p. 37-41.

DESCRIPTORS: *Railroads, Locomotives, *Railroad cars, *Transportation, Economics, Scheduling.

Knaak, R.
COMPARISON BETWEEN GEAR-SHIFT AND FOETTINGER TYPE TORQUE CONVERTER TRANSMISSIONS BASED ON MEASURED ROAD HORSEPOWER (Vergleich Zurschen Triebwerken mit Zahnradwechselgetriebe und Föttinger-Wandler auf Grund Gemessener Fahrleistungen). [1962] [18]p.
Order from SLA $1.60 62-18792

Trans. of V[erein] D[eutscher] I[ngenieure]. Zeitschrift (West Germany) 1954, v. 96, no. 26, p. 899-903.

DESCRIPTORS: *Passenger vehicles, *Transmissions, Clutches, Gears, Automatic transmissions, Torque, *Fuel consumption, Statistical analysis.

A set of statistics had become available, which had been obtained in a series of test runs using city buses on several routes, in normal operation. From the data obtained on the number of gear shifts and starts from a standing stop, it became possible, on the basis of the records of fuel flow and engine RPM, to predict the savings that could be obtained by installing torque converters of various sizes on the same bus. In particular, it was possible to throw some light on the horsepower output ranges which have a determinant effect on fuel consumption, and on the influence of torque converter size on the average fuel consumption. (Author)

Kryukov, N. D. and Gundobin, V. N.
AUTOMATED OPERATIVE PLANNING OF TRAIN AND LOADING OPERATIONS. [1962] 6p.
Order from OTS or SLA $1.10 63-10636

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 8] p. 49-52.

DESCRIPTORS: Automation, Operation, *Management engineering, *Computers, Communication systems, *Railroads, Handling, Railroad cars, Cargo.

Marin, N. V., Beshketo, V. K., and Fleishman, B. A.
IMPORTANT PROBLEMS OF PREPARING THE GRAIN MASS TRANSPORTATION. [1962] 2p.
Order from OTS or SLA $1.10 63-10642

[Condensed] trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 6] p. 33-37.

DESCRIPTORS: *Cereals, Handling, *Railroad cars, Traffic, Cleaning, Railroads, Transportation

Nevzorova, Z. A.
MECHANIZED LOADING AND UNLOADING IN METALLURGICAL MILLS. [1962] 4p. (2 figs. omitted).
Order from OTS or SLA $1.10 63-10639

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 6] p. 74-76.

DESCRIPTORS: *Industrial equipment, *Handling, Metallurgy, Industrial plants, Railroads, Magnets, Hoists, Vacuum apparatus, Containers, Storage, Warehouses, Cargo vehicles, Materials, *Rolling mills.

Ratnikov, V. D.
AUTOMATED CAR SORTING ON A HUMP-YARD. [1962] 8p.
Order from OTS or SLA $1.10 63-10647

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 6] p. 67-72.

DESCRIPTORS: *Automation, *Railroad cars, Railroads, Electronic equipment, *Brakes, *Remote control systems, Electric switches.

Semichastnov, I. F.
DEVELOPMENT OF HYDRAULIC TRANSMISSIONS FOR DIESEL LOCOMOTIVES. [1962] 6p. 1 ref.
Order from OTS or SLA $1.10 63-10644

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 6] p. 47-50.

DESCRIPTORS: *Hydraulic systems, *Transmissions, *Diesel engines, *Locomotives, Railroad cars, Railroads, Hydrodynamics, Operation, Design, Economics.

Vetukhov, E. A. and Kostenko, I. G.
VARIOUS METHODS OF DIRECT RELOADING IN FREIGHT YARDS. [1962] 5p.
Order from OTS or SLA $1.10 63-10635

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 8] p. 60-62.

DESCRIPTORS: Handling, *Cargo, *Railroad cars, Tractors, Trailers, Cargo vehicles, Warehouses, Storage, Railroads, Operation, Economics.

MATERIALS

PROCESS FOR PURIFYING THE SMOKE OF CIGARETTES, CIGARS AND THE LIKE AND FILTER FOR REALIZING SAID PROCESS. [1962].
Order from K-H $7.50 K-H 10934 c

Trans. of Italian patent 531,511, cl. 2, granted 3 Aug 55.

DESCRIPTORS: *Tobacco, *Cigarettes, Smokes, Purification, Gas filters.

Azeliskaya, R. D.
EINFLUSS DER ALKALIOXYDE (Li_2O, Na_2O, K_2O) AUF DEN VORGANG DER MINERALBILDUNG IM ZEMENTKLINKER (Effect of the Alkaline Oxides (Li_2O, Na_2O, K_2O) on the Process of Mineral Formation in Cement Clinker). 11p.
Order from TIB $2.00

Trans. in German of #Zhurnal Prikladnoi Khimii (USSR) 1955, v. 28, no. 10, p. 1049-1054.

DESCRIPTORS: Oxides, Lithium compounds, Sodium compounds, Potassium compounds, *Cements.

Bues, H.
THE BURNING OF HIGH-GRADE PORTLAND CEMENT CLINKER IN THE AUTOMATIC SHAFT KILN. [1962] 9p. (figs. refs. omitted).
Order from SLA $1.10 62-18703

Summary trans. of Zement-Kalk-Gips (West Germany) 1957 [v. 10] no. 5, p. 187-194.

DESCRIPTORS: Combustion, *Cements, Production, Materials, Sintering furnaces

Butt, Yu. M., Maier, A. A., Varshal, B. G.
STABILITY OF HYDRATED CALCIUM SULPHO-ALUMINATES (Ustoichivost' Gidrosul'foalyuminatov Kal'tsiya) tr. by G. N. Gibson. July 61 [4]p. 4 refs. DSIR Library Communication no. 1057; NLL M. 4773.
Order from OTS or SLA $1.10 62-25377

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1961, v. 136, no. 2, p. 398-400.

DESCRIPTORS: *Aluminates, Sulfur compounds, *Calcium compounds, *Hydrates, Stability, *Cements, Hardening.

Holland, I. J.
POROUS PARTS. [1962] 7p.
Order from OTS or SLA $1.10 62-16359

Trans. of Belgian patent 601,082 by Consolidated Beryllium Ltd., publ. 8 Mar 61 (priority: England, 9 Mar 60).

DESCRIPTORS: *Porous materials, Production, *Sponges, Expanded plastics, *Refractory materials, Polymers, Beryllium compounds, Structures, Manufacturing methods.

The invention consists of a process for the manufacture of porous parts according to which a spongy piece of the communicating cell type is impregnated with a suspension or a dispersion of refractory particles in a liquid. The part formed is treated in order to eliminate the liquid and the material constituting the sponge and the refractory particles are agglomerated by calcination. (Author)

Kononenko, V. G., Kushnarenko, S. G., and Chizhov, V. G.
UNTERSUCHUNG DER PLASTIZITÄT VON KONSTRUKTIONSMATERIALIEN BEI HOHEN VERFORMUNGSGE-SCHWINDIGKEITEN (Investigation of the Plasticity of Structural Materials at High Deformation Speeds).
Order from TIB $1.30

Trans. in German of Kuznechno-Shtampovochnoe Proizvodstvo (USSR) 1961, v. 3, no. 7, p. 4-6.

DESCRIPTORS: *Plasticity, Construction, *Deformation, *Velocity, Materials.

Laul, Kh. Kh.
REINFORCED CONCRETE CYLINDRICAL SHELLS WITH CRACKS IN THE TENSILE ZONE AND REINFORCED CONCRETE CYLINDRICAL SHELLS WITH PRESTRESSED REINFORCEMENT (Tsilindricheskie Zhelezobetonnye Obolochki s Treshchinami v Rastyanutoi [and] Tsilindricheskie Zhelozobetonnye Obolochki s Pred varitel'no Napryazhennoi Armaturoi) tr. by G. L. Cairns. Dec 60 [27]p. 4 refs. Library communication no. 1022; DSIR NLL M. 3243.
Order from OTS or SLA $2.60 62-24618

Trans. of Politekhn[icheskii] In[stitut] Tallinn (Estonian SSR). Trudy 1953, ser. A, no. 45, p. 1-43.

DESCRIPTORS: *Reinforced concrete, *Cylindrical bodies, Structural shells, Fracture (Mechanics) Tensile properties, *Reinforcing steel, Construction materials industry.

Mironov, S. A. and Krivitskii, M. Ya.
THE MANUFACTURE OF "GAS CONCRETE" FOR USE IN THE PREFABRICATION OF LARGE SIZED BUILDING UNITS (Gazobeton na Tsementno-Izvestkovom Vyazhushchem dlya Krupnorazmernykh Konstruktsii). [1962] [11]p. (foreign text included). [CSIRO] Trans. 5693.
Order from OTS or SLA $1.60 62-33552

Trans. of Beton i Zhelezobeton (USSR) 1961, no. 8, p. 361-364.

DESCRIPTORS: *Prefabricated buildings, *Concrete, Gases, Construction materials industry.

Pagani, Giovanni and Berzaghi, Bruno.
ANTIFOGGING PRODUCT PARTICULARLY SUITABLE FOR SPECULAR SURFACES AND PROCESS FOR ITS PRODUCTION. [1962] 5p.
Order from OTS or SLA $1.10 62-20010

Trans. of Italian patent 462,021, filed 2 Dec 49, granted 23 Feb 51.

DESCRIPTORS: *Antifogging agents, Optical materials, Production, *Optical equipment.

The invention concerns an antifogging product particularly suitable for specular surfaces, characterized by the feature that it consists of the sodium salt of sulfonated lauryl alcohol at a suitable concentration, combined with glycerol at a suitable concentration, said substances being suitably treated to obtain a pasty product. (Author)

Ratinov, V. B., Rosenberg, T. I., and Rubinina, N. M.
STUDY OF THE KINETICS OF CRYSTALLIZATION OF CALCIUM HYDROSULFOALUMINATE (Issledovanie Kinetiki Kristallizatsii Gidrousul'foaluminata Kal'tsiya) tr. by H. A. Berman. [1962] 9p. 7 refs.
Order from OTS or SLA $1.10 63-15455

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 145, no. 5, p. 1089-1091.

DESCRIPTORS: *Calcium compounds, *Hydroxides, *Aluminum compounds, *Sulfates, Crystallization, Reaction kinetics, *Aluminates, Hydrates.

Ratinov, V. B., Kucheryaeva. G. D. and others.
THE THERMODYNAMIC AND DIFFUSION PROPERTIES OF THE PRINCIPAL CONSTITUENTS OF CEMENT DURING THEIR HYDRATION (Termodinamicheskie i Diffuzionnye Kharakteristiki Osnovnykh Sostavlyayushchikh Tsementa pri Rastvorenii v Vode) tr. by G. L. Cairns. June 62 [12]p. 18 refs. Library Communication no. 1111.
Order from OTS or SLA $1.60 62-33619

Trans. of Stroitel'stvo i Arkhitektura (USSR) 1961, [v. 9] no. 6, p. 135-145.

DESCRIPTORS: *Cements, *Thermodynamics, *Diffusion, Dehydration, Test methods.

Rebinder, P. A.
SURFACE-ACTIVE SUBSTANCES AND THEIR APPLICATION (Poverkhnostno-Aktivnye Veshchestva i Ikh Primenenie). 1963, 19p. 38 refs. PL-480 Int.
Order from OTS $0.50 63-11146

Trans. of Khimicheskaya Nauka i Promyshlennost' (USSR) 1959, v. 4, no. 5, p. 554-565.

DESCRIPTORS: *Surface-active substances, Chemical properties, *Foaming inhibitors, *Colloids, Stabilization, Inhibition, *Plasticizers, *Detergents.

Smolczyk, H. G.
X-RAY DETERMINATION OF THE CRYSTALLINE PHASES OF PORTLAND CEMENT CLINKER. 2 Jan 63, 37p. 27 refs.
Order from SLA $3.60 63-10746

Trans. of Zement-Kalk-Gips (West Germany) 1961, v. 14, no. 12, p. 558-566.

DESCRIPTORS: *Cements, *Fused materials, Quantitative analysis, Phase transitions, *X-ray diffraction analysis, Goniometers, Crystal structure.

Spohn, E.
THE HAUENSHILD REACTION IN THE CEMENT SHAFT KILN. 1 Aug 62 [6]p. (figs. refs. omitted).
Order from SLA $1.10 62-18704

Summary trans. of Zement-Kalk-Gips (West Germany) 1961, v. 14, no. 3, p. 105-108.

DESCRIPTORS: *Cements, Production, Materials, Sintering furnaces, *Chemical reactions

Stolnikov, V. V. and Kind, V. V.
USE OF FLY-ASH FROM THERMAL POWER STATIONS AS AN ADDITIVE TO CEMENT. [1962] [8]p. 1 ref. C. E. Trans. 2642; [DSIR] NLL M. 8891.
Order from OTS or SLA $1.10 63-15187

Trans. of Gidrotekhnicheskoe Stroitel'stvo (USSR) 1961, v. 31, no. 6, p. 18-22.

DESCRIPTORS: *Cements, Additives, *Ash, Power plants (Establishments), Physical properties, Chemical properties, Construction

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1946, VOL. 51, NO. 8: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1962] 2p.
Order from OTS or SLA $1.10 62-10806

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1946, v. 51, no. 8, p. 609-612, 615-617, 619-620.

DESCRIPTORS: *Abstracts, Metals, Aluminum, *Electrochemistry, *Refractory materials, *Ceramic materials, Feldspar.

Contents:
Electrochemistry of protective films on metals. II. Investigation of the behavior of aluminum as a cathode, by E. N. Paleolog and G. V. Akimov
Chromodolomite high refractory concrete and brick, by P. P. Budnikov
Complex utilization of zirconiferous nepheline syenites, by I. I. Kitaigorodskii.

Brückner, R.
THERMAL EXPANSION OF FLINT GLASS AS A FUNCTION OF PREVIOUS HEAT TREATMENT. [1962] 7p. 5 refs.
Order from SLA $1.10 63-10162

Trans. of die Naturwissenschaften (West Germany) 1962, v. 49, no. 7, p. 150-152.

DESCRIPTORS: *Glass, Silicon compounds, Oxides, Heat treatment, *Thermal expansion, Physical properties, Measurement.

Löffler, Johannes, Jebsen-Marwedel, Hans and others.
MELT AND SHAPING OF GLASS: CORDS, I. (Schmelze und Formgebung des Glases: Schlieren, I.). Report of Committee III of the Deutsche Glastechnische Gesellschaft. [1962] [44]p. (foreign text included) 43 refs.
Order from SLA $4.60 62-14862

Trans. of Deutsche Glastechnische Gesellschaft. Fachausschussbericht (West Germany) 1958, no. 56, p. 519-531.

DESCRIPTORS: *Glass, Melting, Microstructure, Microanalysis, Refractive index, Optics, Refractory materials, *Schlieren photography.

Schustek, R.
THE MANUFACTURE AND BEHAVIOR OF DOLOMITE BLOCKS FOR LINING THE WALLS OF ARC FURNACES. Mar 63.
Order from BISI £6 5s BISI-3141

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 26] p. 1846-1855.

DESCRIPTORS: *Dolomite, *Walls, Furnaces, Heat, *Electrical furnaces.

Stocker, H. J.
CONTRIBUTION TO THE STUDY OF THE PROPERTIES OF ZIRCONIA-BASED SOLID SOLUTIONS AND OF THE STABILIZATION OF CUBIC ZIRCONIA. [1962] 55p. 42 refs.
Order from SLA $5.60 63-10012

Trans. of Annales de Chimie (France) 1960 [ser. 13] v. 5, p. 1459-1502.

DESCRIPTORS: *Zirconium compounds, *Dioxides, *Heat-resistant materials, Stabilization, Lattices, Metallic crystals, Crystal structure, Crystals, Synthesis (Chemistry), Decomposition, Microscopy, Solubility, X-ray diffration analysis, Dilatometers, Germanium compounds, Titanium compounds, Oxides, Tin compounds, Calcium compounds, Magnesium compounds, Manganese compounds, Monoxides, Chemical precipitation, *Refractory materials.
Methods of preparation and study of zirconia-based refractory compositions.
Influence of the solution of foreign oxides on the structure of tetragonal zirconia.
Study of cubic zirconia solid solutions.
The stabilization of cubic zirconia.
Study of some systems formed by zirconia with oxides of tetravalent metals.

Tresvyatskii, S. G. and Cherepanov, A. M.
HIGH-REFRACTORY SYSTEMS WITH OXIDES OF LANTHANIDES AND ACTINIDES. 6 Mar 62 [2]p. AID rept. 62-29.
Order from OTS or SLA $1.10 62-24495

Abstract trans. of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1961, v. 6, no. 6, p. 612-618.

DESCRIPTORS: *Refractory materials, *Rare earth elements, *Actinide series compounds, Oxides, Microstructure, Phase studies

On the basis of comparisons and theoretical analyses of the diagrams and X-ray and microstructural analyses of the actual systems, the following preliminary generalizations are made. All systems of tetravalent oxides of actinides with BeO are apparently simple eutectics in the solidus and liquidus temperature ranges. The formation of solid solutions or compounds which are stable at high temperatures has not been observed in these systems. Systems with MgO are probably simple eutectics. However, the formation of solid solutions with limited solubility at higher mole percentages of the actinide oxide is possible in these systems. Systems containing CaO have a liuqidus of the eutectic type and a range of solid solutions at higher mole percentages of the actinide oxide. Systems containing Al_2O_3 in the solidus and liquidus temperature ranges are analogous to systems with BeO. ZrO_2--actinide oxide systems are characterized by the formation of wide ranges of binary solid solutions and a two-phase range of solid solutions at intermediate concentrations. The formation of solid solutions with almost unlimited solubility in the solid state is characteristic of systems with actinide oxides. Systems of trivalent rare-earth oxides with BeO are eutectic and analogous to systems with actinide oxides but have low eutectic points (about 1450-1500°C). Systems with Al_2O_3 are characterized by the formation of a compound of the type $REAlO_3$, which melts at over 2000°C without decomposition, and by the presence of two eutectics between RE_2O_3--$REAlO_3$ and between $REAlO_3$--Al_2O_3. (Extracted)

Velisek, J. and Vasicek, A.
STUDIES ON THE STRUCTURE OF CERAMIC DIAPHRAGMS BY MEANS OF ELECTRIC MEASUREMENTS. [1962] 14p. (figs. tables [refs.] omitted).
Order from SLA $1.60 63-10038

Trans. of Kolloid Z[ei]ts[chrift] (West Germany) 1935, v. 71, no. 1, p. 36-48.

DESCRIPTORS: *Ceramic materials, *Diaphragms (Mechanics), Porous materials, *Capillaries, Measurements, Electrical conductance, Electric potential, Resistance (Electrical), *Surface properties, Thickness, Moisture.

Fuels, Lubricants, and Hydraulic Fluids

BACTERIAL SPECIES HARMFUL TO PETROLEUM PRODUCTS IN STORAGE: ITEM OF INTEREST. 21 Feb 63 [5]p. 7 refs; AD-297 358.
Order from OTS or SLA $1.10 63-15727

DESCRIPTORS: *Bacteria, *Degradation, *Petroleum, Storage, Detection, Identification, Hydrocarbons, Oxidation, Sulfur, Reduction (Chemistry).

A brief report on Soviet investigations of bacterial species that may possibly be damaging agents of petroleum products in storage is presented. The report is based on literature dealing with detection and identification of (1) hydrocarbon-oxidizing bacteria, (2) sulfate-reducing bacteria, and (3) sulfide-oxidizing bacteria.

COKE FROM BITUMINOUS COAL; METHODS OF DETERMINATION OF BREEZE CONTENT AND OF SIZE ANALYSIS, tr. by Z. K. A. Moszynski. Apr 56 [3]p. British Coke Trans. no. 50; [DSIR] NLL M. 3363.
Order from OTS or SLA $1.10 62-24812

Trans. of Russian State Standard GOST 5954-51, gr. L39, approved 29 July 51, date of entry 10 Jan 51 (partly replacing GOST 2669-44).

DESCRIPTORS: *Coke, *Coal, Sizing, Standards, Test methods.

COKE FROM BITUMINOUS COAL: PRINCIPLES AND METHODS OF SELECTING AND DIVIDING SAMPLES, tr. by Z. K. A. Moszynski. Apr 56 [12]p. British Coke Trans. no. 48; [DSIR] NLL M. 3365.
Order from OTS or SLA $1.60 62-24813

Trans. of Russian State Standard GOST 2669-51, gr L39, approved 30 July 51, date of entry 10 Jan 51, repub. Oct 53 (partly replacing GOST 2669-44).

DESCRIPTORS: *Coke, *Coal, Selection, Test methods, Standards, Statistical analysis.

This standard covers the rules of taking and the methods of selecting and dividing samples of coke from bituminous coal, intended for laboratory and mechanical tests.

INVESTIGATION INTO THE FIELD OF SURFACE FORCES: SELECTED ARTICLES [Issledovaniya v Oblasti Poverkhnostnykh Sil]. 20 Dec 62 [46]p. 29 refs. FTD-TT-62-1195. AD-294 522.
Order from OTS or SLA $4.60 63-15508

Unedited rough draft trans. of mono. Konferentsiya po Poverkhnostnym Silam, Moscow [1960]. Sbornik Dokladov, Moscow, 1961, p. 99-112 and 126-138.

DESCRIPTORS: Surface properties, Mechanical properties, Hydrocarbons, *Friction, Boundary layer, Shear stress, Fatty acids, *Lubricants, *Organic acids

Contents:
Properties of solutions of organic acids in liquid hydrocarbons on the surfaces of solid bodies, by G. I. Fuks
New experimental data concerning external friction, by D. M. Tolstoi and others.

Amaev, A. A. and Salazhev, V. M.
USE OF SURFACE-ACTIVE AGENTS IN OIL EXTRACTION. [1962] 9p. 7 refs.
Order from OTS or SLA $1.10 62-20282

Trans. of Neftyanoe Khozyaistvo (USSR) 1961, v. 39, no. 4, p. 33-37.
Another trans. is available from ATS $10.00 as AST-53N53R [1961] 6p.

DESCRIPTORS: *Oils, *Surface-active substances, Production

Treatment of exploitation wells with surface-active agents makes it possible to retard and to stabilize natural water encroachment in wells and even to diminish their relative water content. Reduction of the relative water content in wells as a result of treatments with surface-active agents causes an increase in the oil production rates of exploitation wells. The effectiveness of the treatments depends on the degree and rate of water encroachment in the wells. The best results are obtained where the surface of contact between water and oil is greatest. Treatment of the filters of exploitation wells, with surface-active agents, which makes it possible to obtain additional oil, decreases the period of development of the beds, increases the coefficient of utilization of the reserves in the bed, and is a method for accelerating oil production. (Author)

Brushtein, N. Z.
AUSSICHTEN FUER DIE GEWINNUNG EINES HOCHWERTIGEN GASES DURCH VERGASUNG VON KOHLEN UNTER TAGE (Prospects of Winning of Rich Gas by Gasification of Coal Underground). 12p.
Order from TIB $2.10

Trans. in German of Podzemnaya Gazifikatsiya Uglei (USSR) 1958 [v. 2] no. 1, p. 15-18.

DESCRIPTORS: *Gases, *Coal.

Danilov, I. N. and Murzabulatov, Kh. A.
FACTORS AFFECTING THE THERMAL STABILITY OF JET FUELS. 21 Feb 63 [5]p. AID rept. P-63-27.
Order from OTS or SLA $1.10 63-15919

Review trans. of Nauchno-Issledovatel'skii Institut po Pererabotke Nefti. Trudy (USSR) 1962, v. 5, p. 238-250.

DESCRIPTORS: *Jet engine fuels, Stability, *Thermodynamics, Tests, Test equipment.

The effects of the following factors on the thermal stability of jet fuels were investigated: (1) temperature and heating conditions, (2) duration of heating and heating recycling, (3) preheating, and (4) the surrounding gas, or the so-called gas cushion.

Eigenson, A. S., Tereshchenko, E. R. and others.
PETROLEUMS OF THE NEW OIL SITES IN THE BASHKIR AUTONOMOUS SOVIET SOCIALIST REPUBLIC [AND] THERMAL STABILITY AND CORROSIVENESS OF SULFUR FUELS AT HIGH TEMPERATURES. 25 Jan 62 [15]p. FTD-TT-62-1321.
Order from OTS or SLA $1.60 63-15522

Unedited rough draft trans. of Khimiya Serorganicheskikh Soedinenii, Soderzhashchikhsya v Neftyakh i Nefteproduktakh (USSR) 1961, v. 4, p. 100-102 and 231-235.

DESCRIPTORS: *Petroleum, *Fuels, Chemical analysis, Heat tolerance, *Corrosion, Purification, Sulfur, High temperature research, Pyrolysis.

Feodotov, M. F.
DIE ROLLE DER EXTRAKTIONSSTOFFE BEI DER OXYDATION DER STEINKOHLEN (The Role of Extraction Matters During Oxidation of Bituminous Coal). 7p.
Order from TIB $1.45

Trans. in German of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo, 1961, no. 4, p. 175-178.

DESCRIPTORS: *Oxidation, *Coal, Solvent extraction

Friedrichs, Rolf.
STORAGE CONTAINER CONSISTING OF SUPERPOSED ANNULAR ELEMENTS OF LIMITED HEIGHT, tr. by J. R. -P. 8 Feb 63, 11p. (figs. omitted).
Order from OTS or SLA $1.60 63-15777

Trans. of Austrian patent 203,934, cl. 81a/2, appl. filed 23 Jan 58, pat. term begins 15 Nov 58, pub. 10 June 59 (priorities claimed in Germany, claims 1, 2 and 7 from 26 Feb 57, claims 3 to 6 from 30 Mar 57).

DESCRIPTORS: *Containers, *Storage, *Fuel oil, Structural parts.

Gal'pern, G. D.
VARIABILITY OF ISHIMBAI OILS. [1962] 3p. 7 refs.
Order from OTS or SLA $1.10 62-16794

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1943, no. 5/6, p. 5-17.

DESCRIPTORS: *Oils, *Viscosity, *Density, Polymerization, Chemical analysis, Sulfur, Mineral oils, Petroleum, Sources, Geology

Radmacher, W.
INTERNATIONAL STANDARDIZATION OF SOLID FUEL TESTING. Mar 63.
Order from BISI £ 4 15s BISI-3106

Trans. of Glückauf (West Germany) 1962, v. 98, no. 6, p. 348-357.

DESCRIPTORS: *Fuels, *Coal, *Chemical analysis, Sulfur, Ash, Moisture, Gravimetric analysis, Volumetric analysis, Nitrogen, Carbon, Hydrogen, Dilatometers, Chlorine, Combustion.

Riedl, Rudolf.
PRODUCTION OF CITY-GAS IN PRESSURE GAS-PRODUCER. [1962] 18p.
Order from SLA $1.60 63-10703

Trans. of Paliva (Czechoslovakia) 1946, v. 26, no. 8, p. 109-118.

DESCRIPTORS: *Coal gas, Production, Gases, Pressure, Generators, Carbonization, Coal, Economics.

Voloshin, V. A., Vysotskaya, A. I., and Ganenko, V. E.
ZUR THERMODYNAMIK DES VERKOKUNGS-PROZESSES (On the Thermodynamics of the Coking Process).
Order from TIB $2.35

Trans. in German of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo, 1961, no. 3, p. 183-190.

DESCRIPTORS: *Thermodynamics, *Coke.

Zaslavskii, Yu. S., Shor, G. I. and others.
DROP OF THE CORROSIVITY OF ANTISCRATCH ADDITIVES TO OILS, WITHOUT IMPAIRING THEIR EFFICIENCY. [1962] 8p. 17 refs.
Order from OTS or SLA $1.10 63-10232

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961 [v. 6] no. 12, p. 39-43.
Another trans. is available from OTS or SLA $1.60 in 62-33626, 5 Oct 62 [19]p.

DESCRIPTORS: *Lubricants, *Oils, Additives, Abrasion, *Corrosion inhibition, *Phosphorus compounds.

Leather and Textiles

Böhringer, H[ans] and Bolland, F[ritz].
DEVELOPMENT AND TESTING OF PROFILED SYNTHETIC FIBRES WITH OR WITHOUT CAVITIES. [1962] [21]p. 5 refs.
Order from SLA $2.60 63-15589

Trans. of Faserforschung und Textiltechnik (Germany) 1958, v. 9, no. 10, p. 405-416.
Other translations are available from SLA mi$3.00, ph$6.30 as 59-17264 [1959] [33]p. and mi$2.70, ph$4.80 as 59-17767, June 59 [21]p.

DESCRIPTORS: *Fibers (Synthetic), Textiles, Cavitation, Polyamide plastics, Processing, Tests.

For abstract see Technical Translations: 2: 596, 1959.

Ford, Curry Elliston and Mitchell, Charles Vernon.
PROCESS FOR THE PRODUCTION OF FIBROUS OR FIBER-CONTAINING CARBON-CONTAINING MATERIAL. [1962] 6p. (refs. omitted) 1 ref.
Order from OTS or SLA $1.10 62-20413

Trans. of German preliminary patent 1,130,419, U 6749 IVa/12i, cl. 12i 33, Internat. cl. C 01 b, appl. 18 Dec 59, gr. 30 May 62 by Union Carbide Corp., U. S. A. (priority claimed U. S. A. from 18 Dec 48, no. 781,186).

DESCRIPTORS: *Fibers, Carbon, Cellulose, Heat treatment, Production, Physical properties, Chemical properties, Graphite, *Fibers (Synthetic), Materials.

The invention concerns a process for the production of fibrous or fiber-containing carbon-containing material from cellulose material or regenerated cellulose material, characterized by the fact that this material is heated with a uniform temperature rise, wherein the temperature of the material is increased by 10 to 50°C per hour between 100 and 400°C, whereupon a new heating results wherein the temperature is increased at up to 100°C per hour at temperatures of up to 900°C, and wherein heating is continued at a higher rate of temperature increase until essential graphitization of the material has occurred. (Author)

Hudhin, Donald Edward and Berardinelli, Frank Michael.
NEW FIBROUS MATERIAL. [1962] 5p.
Order from OTS or SLA $1.10 62-20007

Trans. of Belgian patent 606,312, filed 19 July 61 (Priority: U. S. no. 44,544, 22 July 60) by Celanese Corporation of America.

DESCRIPTORS: Polymers, Materials, *Fibers (Synthetic), Textiles.

Kuleev, A. K.
CALCULATION OF THE MATERIAL REQUIREMENTS FOR ELASTIC THREAD ARTICLES. 21 Jan 63 [7]p.
Order from OTS or SLA $1.10 63-10664

Trans. of Legkaya Promyshlennost' (USSR) 1957 [v. 17] no. 12, p. 32-35.

DESCRIPTORS: Materials, *Fibers, Cordage, *Elasticity, Physical properties, Mathematical analysis.

Maffezzoni, Umberto and Alneri, Enzo.
DIMETHYL TEREPHTHALATE FROM p-XYLENE BY SIMULTANEOUS OXIDATION AND ESTERIFICATION (Dimetiltereftalato da p-Xilene per Ossidazione ed Esterificazione Contemporanee). 23 Sep 62 [20]p. (foreign text included) 11 refs.
Order from SLA $1.60 62-18817

Trans. of la Chimica e l'Industria (Italy) 1962, v. 44, no. 6, p. 631-635.

DESCRIPTORS: *Dacron, *Polyethylene plastics, *Phthalates, Methyl radicals, Synthesis, *Xylenes, Oxidation, Esterification, Catalysts, Methanols.

At the present time dimethyl terephthalate is produced on an industrial scale in two separate stages of oxidation and esterification. A new process permits this ester to be obtained in one single step by means of oxidation of p-xylene with air in the presence of CH_3OH vapors which esterify the acids as soon as they are formed. The continuous application of this process permits increased productivity of the reactors and reduction of the apparatus costs; therefore, it represents an advance with respect to that attained to date. The yields are more than 90% with respect to p-xylene, between 60 and 70% with respect to methanol. (Author)

Wegener, Walther and Brehm, Gustav.
INVESTIGATION OF TEMPERATURE CONDITIONS OF CONTACT AND RADIATION HEATING ELEMENTS OF FALSE TWIST DOUBLING FRAMES, I (Untersuchung der Temperaturverhältnisse von Kontakt- und Strahlungsheizkörpern der Falschdrahtzwirnmaschinen, I). [1962] [26]p. (foreign text included).
Order from SLA $2.60 63-15586

Trans. of Textil-Praxis (West Germany) 1960 [v. 15, no. 8] p. 801-810.

DESCRIPTORS: *Fibers (Synthetic), Heat treatment, *Heating elements, Temperature, Measurement, Textiles, Processing, Machines.

Paints and Finishes

IMPROVEMENTS OF PROCEDURES FOR OBTAINING METALLIC PLATINGS. [1962] 30p. (figs. omitted).
Order from OTS or SLA $2.60 63-10259

Trans. of French patent 1,056,203, gr. 8, cl. 3, by Tainton Co., Baltimore (USA) filed 11 Jan 52, granted 21 Oct 53, pub. 25 Feb 54.

DESCRIPTORS: *Platings, *Metal coatings, Powder metals, Chemical compounds, Production.

The object of the invention is the making of an improved coating as well as a method for applying this coating on objects without the use of electricity or without external input of a heat of fusion. The coating, whose thickness is surprisingly very high, is obtained by projecting the particles of the metal used onto the surface of the object and the projection continued until the desired thickness is obtained.

IMPROVEMENTS RELATING TO METHODS OF OBTAINING METALLIC PLATINGS. [1962] 4p.
Order from OTS or SLA $1.10 63-10300

Trans. of French addition patent 72,237, 1st addition to patent 1,056,203, internat. cl. C 23 c, filed 5 Sep 57, granted 26 Oct 59, pub. 30 Mar 60 (priority: 10 Sep 56) by the Tainton Company, USA.

DESCRIPTORS: *Platings, *Metal coatings, Powder metals, Glass, Spheres, Production.

Arrandale, Roy Samuelson and Dreyfuss, Robert G.
COATING MIXTURES FOR COATING GLASS OBJECTS [1962] 10p. (figs. omitted).
Order from OTS or SLA $1.10 63-10262

Trans. of German patent 1,046,842, T 13310 IV c/32 b, cl. 32 b 6/50, internat. cl. C 03c, filed 2 Mar 57, pub. 18 Dec 58, by Thatcher Glass Manufacturing Co., Inc.

DESCRIPTORS: *Glass, *Coatings, Mixtures, *Silicones, Organic solvents, *Protective treatments.

Pegorari, C.
THE PRODUCTION OF DRYING OILS BY SYNTHETIC METHODS. [1962] 6p. (refs. omitted).
Order from SLA $1.10 62-20335

Trans. of [Fette Seifen Anstrichmittel] (Germany) 1942 [v. 49, no. 10] p. 733-735.

DESCRIPTORS: Production, *Desiccants, *Oils, Synthesis (Chemistry), Fatty acids, *Castor oil, Mineral oils, Catalysts, Dehydration, Distillation, Finishes and finishing.

Sarx, H. F.
D-D REACTION PAINTS. 30 Jan 56, 10p. (refs. omitted) 2 refs.
Order from SLA $1.10 62-18609

Trans. of Werkstoffe und Korrosion (West Germany) 1954 [v. 5, no. 8/9] p. 290-295.

DESCRIPTORS: *Paints, Chemical properties, Chemical reactions, Surfaces, Films.

Taubmann, A. B., Tolstaya, S. N. and others.
DIE ADSORPTIONSMODIFIZIERUNG VON FUELLSTOFFEN UND PIGMENTEN SOWIE DIE STRUKTURBILDUNG IN LOESUNGEN VON POLYMEREN. (Adsorption-modification of Fillers and Pigment as well as the Structure Formation in Polymer-Solutions). 7p.
Order from TIB $1.45

Trans. in German of Akademiya Nauk SSSR. Doklady, 1962, v. 142, no. 2, p. 407-410

DESCRIPTORS: *Adsorption, *Pigments, Structures, *Polymer solutions

Photographic Materials

REPRODUCTION LAYERS FOR OBTAINING IMAGES BY THE ACTION OF HEAT. [1962] [16]p.
Order from OTS or SLA $1.60 62-16348

Trans. of Belgian patent 576,280 by Kalle & Co. AG, filed 2 Mar 59 (filed West Germany, 8 Mar 58).

DESCRIPTORS: Reproduction, Images, *Heat, Sensitivity, *Amino acids, Organic acids, *Amines, Ammonium radicals, Infrared lamps, *Photographic images, Photographic emulsions, *Photographic chemicals.

The reproduction layers contain as heat sensitive substances heavy metal salts of amino-dithioformic acids in which the nitrogen atom of the amino group is rendered secondary or tertiary by the introduction of monovalent organic radicals as substituents, these latter also being able to form a closed ring, perhaps substituted, among themselves.

THERMOGRAPHIC COPYING SHEET AND COMPOSITION UTILIZABLE IN THE PREPARATION OF SUCH A SHEET. [1962] 15p.
Order from OTS or SLA $1.60 63-10270

Trans. of French patent 1,294,386, by Nashua Corp. (USA) pat. appl. 862,924, internat. cl. B 41 m, filed 26 May 61, granted 16 Apr 62 (pub. in Bull[etin] Off[iciel] de la Propriété Industrielle (France) 1962, no. 21).

DESCRIPTORS: *Photographic paper, *Heat treatment, *Azo compounds, Colors, Photographic images, Photographic chemicals, *Photosensitivity, Photography, Recording paper.

The present invention concerns duplication techniques and has for its object a photosensitive composition that can be developed in order to produce a colored image by simple application of heat. This composition is suitable for use as a sensitive composition of photographic copying sheets of the direct exposure type, and the sheets of the invention are inexpensive, stable and exceptionally practical when used. A copy can be made by exposing the sheet to ultraviolet rays passing through an original and by heating it then in order to produce a visible duplicate of the original. The copying sheets of the invention can be stored without deterioration for considerable periods of time, up to several months, at normal temperature and at relatively high humidity; when they are used to make copies, they combine the suppleness, clearness and stability of sheets of the diazo type with the speed and convenience of sheets of the thermo-facsimile type.

Grenishin, S. G., Nikolaevskii, L. S., and Solodovnikov, A. A.
APPLICATION OF BOUGUER LAW TO THE ABSORPTION OF LIGHT BY SILVER BROMIDE CRYSTALS. [1962] 6p. 8 refs.
Order from OTS or SLA $1.10 62-18580

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 5, p. 327-330.

DESCRIPTORS: *Light, *Absorption, Bromides, Silver compounds, Crystals, *Photographic emulsions, *Photographic film.

Gurevich, S. B., Breido, I. I., and Gavrilov, G. A.
PHOTOGRAPHIC NOISE AS A FUNCTION OF THE RELATIVE NUMBER OF DEVELOPED GRAINS. [1962] 4p.
Order from ATS $6.50 ATS-38P66R

Trans. of Zh[urnal] Nauchn[oi] i Prikl[adnoi] Fotogr[afii] i Kinematogr[afii] (USSR) 1962, v. 7, no. 4, p. 306-308.

DESCRIPTORS: *Noise, *Photographic emulsions

Hoof, Albert Emiel van and Willems, Jozef Frans.
PROCESS FOR THE PRODUCTION OF GELATIN RELIEF IMAGES BY TANNING DEVELOPMENT OF A SILVER-HALIDE EMULSION LAYER WHICH HAS BEEN EXPOSED AS FOR AN IMAGE. [1962] 10p. 1 ref.
Order from OTS or SLA $1.10 63-10277

Trans. of German patent 1,084,570, by Gevaert Photo-Producten N. V., Mortel, Antwerp (Belgium) (priority claimed: Belgium, 1 July 59) date of appl. 5 Aug 59, pub. of appl. and issuing of inspection copy, 30 June 60.

DESCRIPTORS: *Photographic images, *Gelatins, Silver compounds, *Photographic emulsions, Hardening, Photographic chemicals.

Plastics

Danyushevskii, A. S.
RETARDATION OF THE DECOMPOSITION OF POLYVINYL CHLORIDE BY STABILIZERS-ACCEPTORS OF HYDROGEN CHLORIDE. [1962] 7p.
Order from K-H $8.75 K-H 12166

Trans. of Plasticheskie Massy (USSR) 1961, no. 3, p. 35-36.

DESCRIPTORS: *Polyvinyl chloride, Decomposition, Inhibition, *Hydrogen compounds, *Chlorides, Stability.

Eguchi, Tamotsu and Matsumoto, Masakazu.
CARBOXYL GROUPS IN POLYVINYL ALCOHOL. [1962] [11]p. 7 refs.
Order from SLA $1.60 62-20087

Trans. of Kobunshi Kagaku (Japan) 1958, v. 15, p. 83-88.

DESCRIPTORS: *Polyvinyl alcohol, *Carboxyl radicals, Polymerization.

Fior, Aldo and Malfetti, Luciano.
A PROCESS AND APPARATUS FOR IMPROVING THE MECHANICAL CHARACTERISTICS OF THERMOPLASTIC FILMS. [1962] 10p. (figs. omitted).
Order from OTS or SLA $1.10 62-20418

Trans. of Belgian patent 573,406, 28 Nov 58 (priorities filed in Italy no. 17,144, 29 Nov 57 and no. 13,434, 7 Oct 58) by Montecatini, Società Generale per l'Industria Mineraria e Chimica and Karl Ziegler.

DESCRIPTORS: *Industrial equipment, Processing, *Drawing (Machine processing), *Thermoplastics, *Films, Mechanical properties.

The invention envisages a process for obtaining films formed of thermoplastic polymers and having improved mechanical characteristics in all directions, characterized by the fact that there is realized a plane orientation of the macromolecular chains, necessary for obtaining this improvement of the mechanical characteristics by drawing simultaneously in its forward direction and in the perpendicular direction of a film equipped with thickened borders. (Author)

Flax, Valer, and Disettembrini, Antonin.
PROCESS AND MEANS FOR THE MANUFACTURE OF HOLLOW THERMOPLASTIC ARTICLES, tr. by G. E. 15 Jan 63, 9p. (figs. omitted).
Order from OTS or SLA $1.10 63-15447

Trans. of French patent 1,244,286, Internat'l. cl. B 29d, appl. 7 Jan 60, granted 12 Sep 60.

DESCRIPTORS: *Thermoplastics, Containers, Molding, Manufacturing methods.

Giannini, U. and Cesca, S.
VINYL CHLORIDE POLYMERS OBTAINED WITH CATALYSTS PREPARED FROM ALUMINUM ALKYLS AND VANADIUM COMPOUNDS. [1962] 20p. 21 refs.
Order from SLA $1.60 62-18868

Trans. of [la] Chim[ica] e l'Ind[ustria] (Italy) 1962, v. 44 [no. 4] p. 371-378.

DESCRIPTORS: *Polyvinyl chloride, Polymerization, *Catalysts, *Metalorganic compounds, *Aluminum compounds, Alkyl radicals, *Vanadium compounds, Acetyl radicals, Acetones, Esters, Reaction kinetics, Polymers.

The polymerization of vinyl chloride in the presence of catalysts prepared from aluminum alkyl compounds and transition metal compounds is described. In particular, the use of the catalyst based on $AlCl(C_2H_5)OC_2H_5$ and vanadium diacetylacetonate is described in detail. On the basis of the results obtained, a polymerization mechanism mediated by a radical is suggested. (Author)

Holtschmidt, Hans, Loew, Günther and others.
STABILIZER PROTECTING FROM THE EFFECTS OF HEAT AND HUMIDITY IN POLYESTER MATERIALS MODIFIED BY POLYMERIZABLE MONOMERS OR POLYISOCYANATES, tr. by F. H. B. 19 Oct 62, 7p.
Order from OTS or SLA $1.10 63-13004

Trans. of German Auslegeschrift (DAS) 1,005,726, cl. 39b 22/10, Internat'l. cl. C 08 g, by Farbenfbriken Bayer Aktiengesellschaft, appl. 26 Oct 55, appl. announced and laid open to inspection 4 Apr 57.

DESCRIPTORS: *Polyester plastics, Heat, Humidity, Protective treatments, Transformations, *Isocyanate plastics, Stabilization.

L'vov, B. S., Koltunov, M. A. and others.
PHYSICO-MECHANICAL CHARACTERISTICS OF GLASS PLASTICS BASED ON A POLYESTER RESIN: ELASTIC CONSTANTS OF GLASS PLASTICS.
12 Oct 62, 7p. 2 refs.
Order from OTS or SLA $1.10 63-10094

Trans. of Plasticheskie Massy (USSR) 1962, no. 8, p. 38-40.

DESCRIPTORS: *Polyester plastics, *Glass textiles, Stresses, Deformation, Elasticity, Laminates, Polymers.

Sklyarskii, A. M.
THE CENTRIFUGAL CASTING OF GEAR-WHEELS FROM POLYAMIDE PLASTICS (Tsentrobezhnoe Lit'e Zubchatykh Koles i Krupnogabaritnykh Zagotovok iz Poliamidnykh Smol). [1962] [14]p. (foreign text included) 10 refs.
Order from OTS or SLA $1.60 62-20020

Trans. of Plasticheskie Massy (USSR) 1961, no. 12, p. 22-26.

DESCRIPTORS: *Centrifugal casting, *Gears, *Polyamide plastics, Molding, Melting, Contraction, Plastics.

Centrifugal casting can be quite reliably employed for the production of thickwalled products from polycaprolactame (capron) and resin P-68 (gear-wheels, pulleys, large sized bushing, cuffs, etc.). Under conditions of mass production of such articles, difficulties can be encountered as a result of the variation in shrinkage during casting parts of given dimensions and precision of the 5th class and higher. Considering the great possibilities presented by the new method for the mass production of large sized parts for machines and machine equipment made of polyamides and in particular, gear-wheels with wide-shaped teeth, - which articles could not be produced by other methods (such as pressure casting), it is necessary to accept the method of centrifugal casting as fully adequate. It will be necessary to devote more time and research for the perfection of this method. (Author)

Vieweg, R. and Schneider, W.
ABSORPTION OF WATER AND SWELLING OF PLASTICS. [1962] 7p. (figs. tables omitted).
Order from SLA $1.10 63-10024

Trans. of Kunststoffe (Germany) 1941 [v. 31, no. 12] p. 417-421.
Another trans. is available from SLA mi$2.40, ph$3.30 as 59-15228, 2 Dec 48, 11p.

DESCRIPTORS: *Absorption (Physical), *Water, *Plastics, Hardness, Organic materials, *Phenolic resins, Microphotography, Penetration, Stresses, Molecular structure, Deformation, Moisture.

Volland, Hans.
PREVENTION OF SUNKEN SPOTS, VOIDS, AND INTERNAL STRESSES IN THICK-WALLED THERMOPLASTIC RESINS OR THE LIKE WITH LARGE, DIFFERING WALL-THICKNESSES. [1962] 7p. (figs. omitted).
Order from SLA $1.10 63-10000

Trans. of Kunststoffe (West Germany) 1954, v. 44, no. 11, p. 525-528.

DESCRIPTORS: *Thermoplastics, Resins, Injection, *Molding, Thickness, Stresses, Deformation, Manufacturing methods, Errors.

Thick-walled injection-molded parts and the like with greatly differing wall-thicknesses made of thermoplastic resins are often made under very great difficulties. Different methods of manufacture and sources of error are discussed; a method is pointed out which makes it possible to produce such injection-molded parts with less difficulty. (Author)

Rubber and Elastomers

PRODUCTS MANUFACTURED OF RUBBER, CHLOROHYDRATE AND PROCEDURE FOR MAKING THEM. [1955] 7p. (figs. omitted).
Order from OTS or SLA $1.10 62-16379

Trans. of French patent 836 705, gr. 14, cl. 5, by Wingfoot Corp. (U.S.) appl. 15 Apr 38, issued 25 Oct 38, pub. 25 Jan 39.

DESCRIPTORS: *Rubber, *Chlorine compounds, *Hydrates, Manufacturing methods, *Films.

Korol', I. P. and Skrobot, V. S.
SPRITZBARKEIT UND VISKOSITÄT VON GUMMIMISCHUNGEN (Spraying Ability and Viscosity of Rubber Mixtures). 5p.
Order from TIB $1.20

Trans. in German of Kauchuk i Rezina (USSR) 1962, v. 21, no. 6, p. 21-23.

DESCRIPTORS: *Sprays, *Viscosity, *Rubber, Mixtures.

Savinskii, I. S. and Khokhryakov, P. A.
ISOPENTAN IM ERDÖL UND IN DEN GELÖSTEN GASEN: EIN ROHPRODUKT FUER DIE KAUTSCHUKSYNTHESE (Isopentane in Mineral Oil and in Solved Gases: a Raw Product for the Rubber Synthesis). 3p.
Order from TIB $0.95

Trans. in German of Khimiya i Tekhnologiya Topliv i Masel (USSR) 1958 [v. 3] no. 1, p. 23-24.

DESCRIPTORS: *Pentanes, *Mineral oils, *Gases, Solutions, *Synthetic rubber.

Wood and Paper

METHOD FOR THE PREPARATION OF A HEAT-SENSITIVE RECORDING PAPER. [1962] 6p. 2 refs.
Order from OTS or SLA $1.10 62-16332

Trans. of Dutch patent application 243343, submitted 15 Sep 59, by Permaco S.A., Vesenaz, Switzerland, announced 15 May 61 (Swiss priority 16 Sep 58.

DESCRIPTORS: *Recording paper, Heat, Sensitivity, Preparation, Paper.

Bogdanov, K.
UEBER DIE ERHÖHUNG DER FEUCHTIGKEITSSTABILITÄT VON SEEKARTEN (Increasing the Moisture-Resistance of Navigation Charts). 4p.
Order from TIB $1.10

Trans. in German of Morskoi Flot (USSR) 1960 [v. 20] no. 8, p. 1.

DESCRIPTORS: *Moisture proofing, *Navigation charts.

Boris, B. P., and Lebedev, P. I.
AN APPARATUS FOR MANUFACTURING ITEMS FROM FIBRE PULP. [1962] 1p.
Order from OTS or SLA $1.10 63-10334

Trans. of USSR patent 134,557, 25 Dec 60.

DESCRIPTORS: *Wood pulp, Fibers (Natural), Material forming.

Bouveng, Hans O.
SOME ASPECTS OF SLIME DEPOSIT IN PAPER MACHINES. [1962] 6p.
Order from SLA $1.10 63-10768

Trans. of Svensk Pappers-tidning, 1962, v. 65, no. 18, p. 681-684.

DESCRIPTORS: *Paper, *Machines, Fouling, Deposits, Control, Mechanical properties, Biological products, *Microorganisms, Paper industry, *Waste (Industrial).

Brecht, W. and others.
CONTROL OF THE WATER CIRCULATION IN PAPER MILLS. [1962] 18p. (figs. omitted) 9 refs.
Order from SLA $1.60 63-10335

Trans. of Wochenblatt für Papierfabrikation (West Germany) 1961, v. 89, no. 17, p. 821-831.

DESCRIPTORS: Control systems, *Water, Paper, Industrial plants, Consumption, *Flowmeters, Oxygen, Electrometers, *Paper industry, Waste (Industrial), Economics

Flyate, D. M. and Levdik, I. Yu.
SOME IRREVERSIBLE PHENOMENA IN DRYING PAPER AND CELLULOSE (PULP). [1962] 10p. (figs. omitted) 13 refs.
Order from OTS or SLA $1.10 62-20470

Trans. of Bumazhn[aya] Prom[yshlennost'] (USSR) 1962, v. 37, no. 3, p. 14-16.

DESCRIPTORS: *Paper, *Cellulose, Dehydration, Wood pulp fibers, Mechanical properties.

Gromov, V. S.
THE INFLUENCE OF SOME SALTS UPON THE PROCESS OF WOOD DELIGNIFICATION (K Voprosu o Vliyanii Nekotorykh Solei na Protsessy Delignifikatsii Drevesiny). [1961] [29]p. (foreign text included) 11 refs.
Order from OTS or SLA $2.60 61-20834

Trans. of Akad[emiya] Nauk Latv[iiskoi] SSR, Riga. Institut Lesokhoz[yaistvennykh] Problem i Khimii Drevesiny. Trudy, 1959, v. 17, p. 105-114.

DESCRIPTORS: *Wood, *Lignin, Carbohydrates, Solubility, Salts, Cellulose, Separation.

The addition of Na_2SO_4 to the hydrotropic solution (that is a concentrated solution of Na xylenesulfonate) causes a slowing down of the hydrolytic processes in the hydrotropic pulping and some deceleration of the process of delignification. Yet the introduction of Na_2SO_4 in amounts of up to 3.5 by weight of the original wood employed actually cuts down the delignification insignificantly only, as far as plant production is concerned; as this hydrolytic process is actually a milder one, both yield and mechanical properties of the cellulose are increased. The presence of NaCl in the hydrotropic solution does not affect the delignifying properties thereof. A water-pulping of the wood at higher temperature leads to a change of part of the lignin and of the carbohydrates, they namely become then soluble in weak alkalies. Here the ratio of dissolved lignin/dissolved carbohydrate will be roughly 1:1. (Author)

Hachihama, Yoshikazu and Hayashi, Izumi.
WOOD AS A RAW MATERIAL OF ORGANIC SYNTHETIC CHEMISTRY. [1962] 47p. 140 refs.
Order from SLA $4.60 62-20343

Trans. of Yuki Gosei Kagaku Kyokai Shi (Japan) 1956, v. 14, no. 3, p. 109-124.

DESCRIPTORS: *Wood, *Chemical industry, Lignin, Furfurals, Wood pulp, Carbohydrates, Industrial production.

Mederveen, G. van.
THE BEATING OF PULP BY MEANS OF LABORATORY APPARATUS. Nov 62, 10p. (figs. omitted).
Order from SLA $1.10 63-10066

Trans. of Paperi ja Puu (Finland) 1962, v. 44, no. 4a, p. 159-162, 167-172.

DESCRIPTORS: *Sulfate pulp, *Wood pulp, *Paper, Processing, Laboratory equipment, Operation, Physical properties, Microscopy.

Müller-Rid, W.
THE MODERN FOURDRINIER WET END. 10 Aug 62, 22p. (figs. omitted) 9 refs.
Order from SLA $2.60 62-18801

Trans. of Wochenblatt für Papierfabrikation (West Germany) 1961 [v. 89] no. 11/12, p. 531-546.

DESCRIPTORS: *Wood pulp, Fibers, *Paper, Manufacturing methods, Machines, Design.

The requirement for a Fourdrinier wetend is to dewater the fibre suspension, which is brought onto the running wire in constant quantity and consistency per time and width unit through the slice of the headbox in such a way that the required dry-content for the transfer of the paperweb from the wire to the felt is obtained during the time available and that at the same time the necessary quality is maintained. To perform this drainage effect each wetend is built with the same building elements. The design and the operating of these building elements were discussed first and some typical designs of wetends were described later on, showing how these building elements have to be assembled for each case of production. This discussion was done mainly in principle, the explanation of design details was renounced consciously. It could be shown that the design of the wetend is influenced mainly by the technological point of view. The requirements of operation must subordinate to the technological requirements. Therefore only a compromise solution can be created. One-purpose machines can meet the different requirements much easier than multi-purpose machines, because these must not only produce different grades but are operated under different machine speeds. The advantage of the one-purpose machine in comparison to the multi-purpose machine have been stressed consciously, to show were the limits during the design of Fourdrinier wetends are with regard to meeting a comprehensive production program. (Author)

Oltus, Eugen and Eliasova, Darina.
ON THE PROBLEM OF DE-CRYSTALLISATION OF CELLULOSE. [1962] 11p. [figs. refs. omitted].
Order from SLA $1.60 63-10732

Trans. of Zellstoff u[nd] Papier (Germany) 1961, v. 10, no. 10, p. 370-374.

DESCRIPTORS: *Cellulose, Crystal structure, Crystal lattices, Crystallization, Reduction, *Paper industry.

Zosim, Z. L.
THE INFLUENCE OF THERMAL DECOMPOSITION OF CELLULOSE PULP ON THE REMOVAL OF ITS MINERAL CONSTITUENTS (Vliyanie Termodestruktsii Tsellyulozy na Udalenie iz Nee Mineral'nykh Primesei). 1963, 2p. 6 refs. PL-480 Agr.
Order from OTS $0.50 63-11090

Trans. of Bumazhnaya Promyshlennost' (USSR) 1959 [v. 34] no. 7, p. 9.

DESCRIPTORS: *Wood pulp, *Cellulose, *Minerals, Separation, Pyrolysis, *Paper.

Zotova-Spanovskaya, N. P., Vasil'eva, T. M., and Naida, V. M.
EINE NEUE VORRICHTUNG ZUR BESTIMMUNG DES LEIMUNGSGRADES VON PAPIER (A New Apparatus for Determining the Bonding-degree of Paper). 4p.
Order from TIB $1.10

Trans. in German of Bumazhnaya Promyshlennost' (USSR) 1962, v. 37, no. 3, p. 28-29.

DESCRIPTORS: *Instrumentation, Determination, *Bonding, *Paper industry

MATHEMATICS

MATHEMATICS AND DATA PROCESSING. 17 Apr 63 [21]p. JPRS: 18740.
Order from OTS $0.50 63-21593

Trans. of Korunk (Rumania) 1963, v. 22, no. 2, p. 154-160 and 179-184.

DESCRIPTORS: *Mathematics, Data, Processing, *Computers, Statistical processes, Probability, *Language, *Rumania, Vocabulary, Cybernetics, Information theory.

Contents:
Visit to the Rumanian Institute of Mathematics, by Bela Iaszlo
Mathematical methods and Rumanian linguistics, by Emese Kiss.

Boltyanskii, V. G.
EQUIVALENT AND EQUIDECOMPOSABLE FIGURES, tr. by Alfred K. Henn and Charles E. Watts. 1963, 68p
Order from Heath Publishing Co., 285 Columbus Ave., Boston, Mass. $1.85

Trans. of unidentified Russian mono., n.p., n.d.

DESCRIPTORS: *Geometric forms, *Transformations (Mathematics), Geometry.

Cherkasov, A. N.
A NOTE ON LINEAR DIFFERENTIAL EQUATIONS OF THE SECOND ORDER. [1962] 9p.
Order from OTS or SLA $1.10 62-20220

Trans. of Moscow U. Vestnik. [Seriya Matematiki, Mekhaniki, Astronomii, Fiziki, Khimii] (USSR) 1958 [v. 13] no. 3, p. 13-16.

DESCRIPTORS: *Equations, *Differential equations, Integration.

Dubnov, Yakov Semenovich.
MISTAKES IN GEOMETRIC PROOFS, 2D ED., tr. by Alfred K. Henn and Olga A. Titelbaum. 1963, 57p.
Order from Heath Publishing Co., 285 Columbus Ave., Boston, Mass. $1.55

Trans. of mono. [Oshibki v Geometricheskikh Dokazatel'stvakh] 2d. ed., n.p., 1955.

DESCRIPTORS: *Geometry, Mathematical logic, Errors.

Eidel'man, S. D.
ESTIMATES OF SOLUTIONS OF PARABOLIC SYSTEMS AND SOME OF THEIR APPLICATIONS. [1962] 42p. 7 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R54. When supply is exhausted, order from OTS or SLA $4.60, 63-10121

Trans. of Matematicheskii Sbornik (USSR) 1953, v. 33(75) no. 2, p. 359-382.

DESCRIPTORS: *Partial differential equations, *Differential equations, Green's function, Equations, Matrix algebra.

New estimates are obtained for elements of Green's matrix, which is the fundamental matrix for a parabolic system of differential equations; applications of these estimates to the problem of uniqueness of the Cauchy problem in the class of unbounded functions and to the question of the existence of a solution of the Cauchy problem with respect to unbounded initial functions are given; and certain classical theorems are extended to the solutions of very general parabolic systems. (Author)

Fetisov, A. I.
PROOF IN GEOMETRY, tr. by Theodore M. Switz and Luise Lange. 1963, 55p.
Order from Heath Publishing Co., 285 Columbus Ave., Boston, Mass.

Trans. of mono. [O Dikazatel'stvakh v Geometrii] n.p., 1954.

DESCRIPTORS: *Geometry, Mathematical logic.

Lopshits, A. M.
COMPUTATION OF AREAS OF ORIENTED FIGURES, tr. by J. Massalski and Coley Mills, Jr. 1963, 58p.
Order from Heath Publishing Co., 285 Columbus Ave., Boston, Mass. $1.55

Trans. of mono. [Vychislenie Ploshchadeiorientirovannykh Figur, Moscow] 1956.

DESCRIPTORS: *Geometric forms, *Geometry,

Lozinskii, S. M.
ERROR ESTIMATES FOR THE NUMERICAL INTEGRATION OF ORDINARY DIFFERENTIAL EQUATIONS, I (Otsenka Pogreshnosti Chislennogo Integrirovaniya Obyknovennykh Differentsialnykh Uravnenii, I). Sep 62 [75]p. 21 refs.
Order from OTS or SLA $7.60 62-20210

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Matematika (USSR) 1958, no. 5, p. 52-90.

DESCRIPTORS: *Differential equations, Equations, *Integration, Errors, Numerical analysis.

Contents:
Summary of notations and preliminary lemmas for an error estimate of numerical integration
Error estimate for extrapolation methods of numerical integration.

Shervatov, V. G.
HYPERBOLIC FUNCTIONS, 2D ED., tr. by A. Gordon Foster and Coley Mills, Jr. 1963, 55p.
Order from Heath Publishing Co., 285 Columbus Ave., Boston, Mass. $1.55

Trans. of mono. [Giperbolicheskie Funktsii, 2d. ed., Moscow] 1958.

DESCRIPTORS: *Special functions.

Shilov, G. E. and Natanson, I. P.
HOW TO CONSTRUCT GRAPHS [AND] SIMPLEST MAXIMA AND MINIMA PROBLEMS, 3D ED., tr. by Jerome Kristian and others. 1963, 53p.
Order from Heath Publishing Co., 285 Columbus Ave., Boston, Mass. $1.50

Trans. of monos. [Kak Stroit' Grafiki, Moscow] 1959 and [Prosteishie Zadachi na Maksimum i Minimum, 3d ed., Moscow] 1960.

DESCRIPTORS: *Graphic analysis, *Calculus, Calculus of variations.

Trakhtenbrot, Boris Avraamovich.
ALGORITHMS AND AUTOMATIC COMPUTING MACHINES, 2D ED., tr. by Jerome Kristian and others. 1963, 101p.
Order from Heath Publishing Co., 285 Columbus Ave., Boston, Mass. $2.10

Trans. of mono. [Algoritmy i Mashinnoe Reshenie Zadachi, 2d ed., Moscow] 1960.

DESCRIPTORS: *Algorithms, *Digital computers, Computers.

Computing Devices

Krug, G. K. and Letskii, E. K.
EIN LERNENDER AUTOMAT VOM TABELLENTYP. (Table-type Self-learning Automaton). 5p.
Order from TIB $1.20

Trans. in German of Avtomatika i Telemekhanika (USSR) 1961, v. 22, no. 10, p. 1360-1366.

DESCRIPTORS: Tables, *Automation, Education.

Martynov, E. M.
A SHIFT REGISTER-DECODER. 10 Jan 63, 6p.
FTD-TT-62-1436.
Order from OTS or SLA $1.10 63-15552

Unedited rough draft trans. of Soviet patent 131777 (647108/26) 14 Dec 59.

DESCRIPTORS: *Magnetic cores, Magnetic core storage, *Computer storage devices, Hysteresis, *Transistors, Switching circuits, Semiconductor devices, *Coding.

The magnetic-core shift register-decoder with a square hysteresis loop and transistors is distinguished by the fact that, in order to decrease the number of circuit elements, decoding windings (whose number is equal to the number of decoder outputs) are placed on each magnetic core; to these windings are connected transistors whose bases are connected in series with the decoding windings and the winding of the "one" generator, which serve to add the induced voltages when decoding. (Author)

Perevertsev-Orlov, V. S. and Polyakov, V. G.
DER AUFBAU EINER LESEMASCHINE (Construction of a Reading Machine). 4p.
Order from TIB $1.10

Trans. in German of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1961, no. 3, p. 110-112.

DESCRIPTORS: Construction, *Reading machines

MECHANICS

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 56 (MECHANICS SERIES). 18 Apr 63 [69]p. JPRS: 18780.
Order from OTS $1.75 63-21611

Trans. of selected abstracts from Referativnyi Zhurnal. Mekhanika (USSR) 1962, nos. 1-12.

DESCRIPTORS: *Abstracts, *Mechanics, Hydrodynamics, Meteorology, Plasticity, Elasticity, Hydraulic research, Aerodynamics, Porous materials, Materials, Creep, Soil mechanics, Machines, Heat transfer.

SOVIET ABSTRACTS: MECHANICS, 1960, NO. 9, ABSTRACTS 11066-12579. [1962] [132]p.
Order from OTS or SLA $10.50 62-32968

Trans. of Soviet abstracts from Referativnyi Zhurnal. Mekhanika (USSR) 1960, no. 9.

DESCRIPTORS: *Abstracts, *Mechanics, Scientific research, Spacecraft, Motion, Theory, *Fluid mechanics, Explosion effects, *Aerodynamics, *Hydraulic research, Internal combustion engines, *Hydrodynamics, Ocean currents, Ships, Heat transfer, Liquids, Gases, Magnetohydrodynamics, *Elasticity, *Plasticity, Mechanical properties, Boundary layer, Soil mechanics, Structural parts, Plastics.

SOVIET ABSTRACTS: MECHANICS, 1961, NO. 1, ABSTRACTS 1A1-1V576. [1962] [166]p.
Order from OTS or SLA $12.00 63-15459

Trans. of Soviet abstracts from Referativnyi Zhurnal. Mekhanika (USSR) 1961, no. 1.
A trans. of abstracts pertaining to Communist China only is available from OTS or SLA $2.60 in 62-23827, JPRS-13367 9 Apr 62 [30]p.

DESCRIPTORS: *Abstracts, *Mechanics, *Fluid mechanics, *Hydrodynamics, *Hydraulic research, *Aerodynamics, Acoustics, *Elasticity, *Plasticity, Vibration, Explosion effects, Internal combustion engines, Theory, Ships, Ocean currents, Water waves, Soil mechanics, Structural parts, Mechanical properties, Conferences, Dams, Magnetohydrodynamics, Plasma physics.

SOVIET ABSTRACTS: MECHANICS, 1961, NO. 5, ABSTRACTS 5A1-5V598. [1962] [195]p.
Order from OTS or SLA $13.50 63-19041

Trans. of Soviet abstracts from Referativnyi Zhurnal. Mekhanika (USSR) 1961, no. 5.

DESCRIPTORS: *Abstracts, *Mechanics, Scientific research, Motion, Stability, Theory, *Fluid mechanics Magnetohydrodynamics, Gases, Plasma physics, Explosion effects, *Aerodynamics, *Hydrodynamics, *Hydraulic research, Internal combustion engines, Ships, Boundary layer, Heat transfer, Liquids, *Elasticity, *Plasticity, Soil mechanics, Structural parts, Mechanical properties, Plastics.

SOVIET ABSTRACTS: MECHANICS, 1962, NO. 4, ABSTRACTS 4A1-4V572. [1962] [53]p.
Order from OTS or SLA $5.60 62-33359

Trans. of Soviet entries from Referativnyi Zhurnal. Mekhanika (USSR) 1962, no. 4.

DESCRIPTORS: *Indexes, *Mechanics, Scientific research, Satellites (Artificial), Motion, Theory, *Fluid mechanics, Explosion effects, *Aerodynamics, Acoustics, *Hydraulic research, Internal combustion engines, *Hydrodynamics, Ocean currents, Ships, Heat transfer, Liquids, Gases, *Elasticity, *Plasticity, Mechanical properties, Soil mechanics, Magnetohydrodynamics

SOVIET ABSTRACTS: MECHANICS, 1962, NO. 5, ABSTRACTS 5A3-5V555. [1962] [46]p.
Order from OTS or SLA $4.60 62-33360

Trans. of Soviet entries from Referativnyi Zhurnal. Mekhanika (USSR) 1962, no. 5.

DESCRIPTORS: *Indexes, *Mechanics, Scientific research, Statellites (Artificial), Motion, Theory, *Fluid mechanics, Explosion effects, *Aerodynamics, Acoustics, *Hydraulic research, Internal combustion engines, *Hydrodynamics, Ocean currents, Ships, Heat transfer, Liquids, Gases, *Elasticity, *Plasticity, Mechanical properties, Soil mechanics, Magnetohydrodynamics.

An English translation of the titles and references of Soviet items in the Russian abstract journal Referativnyi Zhurnal Mekhanika.

SOVIET ABSTRACTS: MECHANICS, 1962, NO. 6, ABSTRACTS 6A1-6V563. [1962] [55]p.
Order from OTS or SLA $5.60 63-15460

Trans. of Soviet entries from Referativnyi Zhurnal. Mekhanika (USSR) 1962, no. 6.

DESCRIPTORS: *Indexes, *Mechanics, Scientific research, Space probes, Stability, Motion, Theory, *Fluid mechanics, Explosion effects, *Aerodynamics, Rockets, *Hydraulic research, Internal combustion engines, *Hydrodynamics, Ocean currents, Ships, Heat transfer, Liquids, Gases, *Elasticity, *Plasticity, Mechanical properties, Soil mechanics, Magnetohydrodynamics, Plasma physics.

An English translation of the titles and references of Soviet items in the Russian abstracts journal Referativnyi Zhurnal Mekhanika.

SOVIET ABSTRACTS: MECHANICS, 1962, NO. 10, ABSTRACTS 10A1-10V597. [1962] [57]p.
Order from OTS or SLA $5.60 63-15434

Trans. of Soviet entries from Referativnyi Zhurnal. Mekhanika (USSR) 1962, no. 10.

DESCRIPTORS: *Indexes, *Mechanics, Scientific research, Spacecraft, Stability, Motion, Theory, *Fluid mechanics, Explosion effects, *Aerodynamics, Rockets, *Hydraulic research, Internal combustion engines, *Hydrodynamics, Ocean currents, Ships, Heat transfer, Liquids, Gases, *Elasticity, *Plasticity, Mechanical properties, Soil mechanics, Magnetohydrodynamics.

An English translation of the titles and references of Soviet items in the Russian abstract journal Referativnyi Zhurnal Mekhanika.

Amiro, I. Ya.
INVESTIGATION OF THE ULTIMATE LOAD FOR RIBBED CYLINDRICAL SHELLS SUBJECTED SIMULTANEOUSLY TO AXIAL FORCES AND INTERNAL PRESSURE (Doslidzhennya Granychnogo Nayantazhennya dlya Rebristikh Tsilindrichnikh Obolonok, Piddanikh Odnochasnii dii Os'ovikh Syl Ta Vnutrishn'ogo Tisku). Nov 62 [13]p. 5 refs. RTS 2167.
Order from OTS or SLA $1.60 63-15273

Trans. of Prykladna Mekhanika (USSR) 1961, v. 7, no. 5 [p. 496-502].

DESCRIPTORS: *Cylindrical bodies, *Structural shells, Stability, Structures, Mathematical analysis, *Applied mechanics, Load distribution, Pressure.

On the basis of the linear theory of shells by means of the energy method is determined the critical axial force which corresponds with a general elastic loss of stability of the structure under consideration. At the same time the distribution of the reinforcing ribs of the shell is taken into account and the possible forms of the loss of stability are investigated.

Khokhlov, V. A.
UNTERSUCHUNG DER AUSDEHNUNGSFESTIGKEIT MINERALISCHER ÖLE FUER STELLGLIEDER IN REGELUNGSSYSTEMEN (Testing of the Expansion Force of Mineral Oils for Adjusting Links in Regulating Systems). 5p.
Order from TIB $1.20

Trans. in German of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1961, no. 6, p. 85-88.

DESCRIPTORS: *Pressure regulators, *Mineral oils, Series expansion.

Aerodynamics and Pneumatics

Girerd, Henry and Guienne, Paul.
NEW STATIC PRESSURE PROBES FOR AERODYNAMIC MEASUREMENTS (Nouvelles Sondes de Pression Statique pour Mesures Aerodynamiques). 25 Nov 58 [3]p.
Order from SLA $1.10 62-18799

Trans. of Acad[emie des] Sci[ences] Paris. Comptes Rendus (France) 1949, v. 228, 21 Feb, p. 651-653 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Gas flow, Measurement, *Pressure gages, Design.

Kalikhman, L. E.
TURBULENT BOUNDARY LAYER IN GAS FLOW PAST A PLATE (Turbulentnyi Pogranichnyi Sloi na Ploskoi Plastine, Obtekaemoi Gazom). [1961] 6p. 5 refs. MDF K 104.
Order from OTS or SLA $1.10 62-23184

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1956, v. 106, no. 1, p. 23-26.

DESCRIPTORS: *Flat plate models, *Turbulent boundary layer, Gas flow, Boundary layer.

Laing, Nikolaus.
BLOWER AIRFOILS WITH MULTIPLE-IMPINGEMENT DRUM ROTORS, tr. by L. A. N. 8 Oct 62, 9p. (figs. omitted).
Order from OTS or SLA $1.10 63-13006

Trans. of German Auslegeschrift (DAS) 1,051,647, cl. 62b, 4/08, internat'l cl. B 64 c, appl. 18 Apr 57, appl. announced and pub. of Auslegeschrift 26 Feb 59.

DESCRIPTORS: *Airfoils, Blowers, Lift, Jets, Impellers, Rotor blades (Turbomachinery), Design.

Hydrodynamics, Hydraulics, and Hydrostatics

Mozharov, N. A.
INVESTIGATION OF THE CRITICAL VELOCITY FOR STRIPPING THE MOISTURE FILM FROM A STEAM PIPE [Issledovanie Kriticheskoi Skorosti Sryva Plenki Vlagi so Stenki Paroprovoda]. [1962] 10p. (figs. omitted) 4 refs.
Order from OTS or SLA $1.10 63-15146

Trans. of Teploenergetika (USSR) 1959, v. 6, no. 2, [p. 50-53].
Other translations are available from LC or SLA mi$1.80, ph$1.80 as 61-13996, RTS-1581, Nov 60 [9]p. and 61-13206, DSIR LLU M. 1885 [1960] 9p. and from OTS or SLA $1.10 as AEC-tr-5049, 2 Apr 62 [8]p.

DESCRIPTORS: *Steam pipes, Pipes, Walls, *Moisture, Films, *Steam, Velocity, Surface tension, Pressure, Hydrodynamics.

For abstract see TT, 5:263-264, 1961.

Przhiyalkovskii, M. M. and Petrova, I. N.
THE HYDRAULIC RESISTANCE OF PIPES DURING THE RISING OF HIGH VELOCITY STEAM AND WATER MIXTURES AT HIGH AND SUPER-HIGH PRESSURES (Gidravlioheskie Soprotivleniya Trub pri Pod'emnom Dvizhenii Parovodyanoi Smesi s Bol'shimi Skorostyami pri Vysokom i Sverkhvysokom Davleniyakh). July 62 [16]p. 2 refs. RTS 2045.
Order from OTS or SLA $1.60 63-13247

Trans. of Teploenergetika (USSR) 1961 [v. 8] no. 6, p. 25-28.
Another trans. is available from ATS $10.00 as ATS-09N54R [1961] 7p.

DESCRIPTORS: *Drag, *Steam pipes, Boiler tubes, *Steam, *Water, Mixtures, Velocity, Pressure, Motion, *Hydrodynamics, Boundary layer.

Experimental data are given on the hydraulic resistance during the flow of steam and water mixtures in vertical pipes at a weight rate of flow per unit cross-sectional area ranging from 1000 to 5000 kg/m^{2}sec, at pressures of 100 to 200 atm. abs. and at weight contents of steam up to 0.90.

Statics, Kinematics, and Kinetics

Djubeck, Jozef.
DYNAMIC METHOD FOR CALCULATING THE STABILITY OF THIN-WALLED BARS OF OPEN CROSS SECTION. [1962] 15p. 4 refs.
Order from SLA $1.60 62-20135

Trans. of unidentified article, Bratislava (?) n.d.

DESCRIPTORS: *Structural shells, *Cylindrical bodies, *Rods, Dynamics, *Elasticity, Theory, Deformation, Compressive properties, Buckling.

Feodos'ev, V. I.
ON THE STABILITY OF A SPHERICAL SHELL UNDER THE ACTION OF AN EXTERNAL UNIFORMLY DISTRIBUTED PRESSURE [Neustanovivsheesya Dvizhenie Vyazkoi Zhidkosti Sozdavaemoe Vrashchayushchimsya Diskom). [1961] 10p. 7 refs. MDF F-104.
Order from OTS or SLA $1.10 62-23112

Trans. of Prikl[adnaya] Mate[matika i] Mekh[anika] (USSR) 1954, v. 18, no. 1, p. 35-42.

DESCRIPTORS: *Structural shells, Spheres, Stability, Pressure, Stresses, Buckling, Nonlinear systems.

METALLURGY

THE AIRCOMATIC WELDING PROCESS. 2 Dec 58, 11p. (figs. omitted).
Order from SLA $1.60 62-20178

Trans. of Technica (Switzerland) 1953, v. 2, no. 21, p. 4-8.

DESCRIPTORS: *Arc welding, Argon, Welding rods, *Aluminum, Alloys.

Anders, W.
THE ELECTRO-SLAG PROCESS FOR WELDING HEAVY SECTIONS [Das Lichtbogenlose Schweissen Dicker und Grosser Kompakter Querschnitte mit der Elektro-Schlacke-Schweissung]. [1962] [35]p. 8 refs.
Order from SLA $3.60 62-20079

Trans. of Schweissen und Schneiden (West Germany) 1957, v. 9, no. 1, p. 12-24.
Another trans. is available from SLA mi$2.70, ph$4.80 as 59-17311 [1959] [30]p.

DESCRIPTORS: *Electroslag process, *Welding, Industrial equipment machines, Fluxes, Welding rods, Steel

For abstract see Technical Translations 2:512, 1959.

Bath, R.
USE OF BETATRON AND CLASSICAL METHODS OF X- AND γ-RAY METHODS OF EXAMINATION FOR CONTROL OF MATERIALS AND WELDING AT ELECTRICITE DE FRANCE. Apr 63.
Order from BISI £5 5s BISI-3114

Trans. of Revue Universelle des Mines (France) 1962 [v. 105, ser. 9] v. 18 [no. 6] p. 426-436.

DESCRIPTORS: *Betatrons, *X-rays, *Gamma rays, Detection, Errors, Crazing, Materials, Radiography, Ultrasonics, Welds, Control, Welding, Non-destructive testing.

Batyuk, A. G.
ZUR FRAGE DER SULFATISIERUNG VON BLEIHUETTENSTAUB DURCH STARKE SCHWEFELSÄURE IN EINER WIRBELSCHICHT (The Sulphatization of flue Dust in Lead-refining Plants by Strong Sulphuric Acid in a Fluidizing Bed). 22p.
Order from TIB $3.35

Trans. in German from Akademiya Nauk Kazakhskoi SSR, Alma-Ata. Izvestiya. Seriya Gornogo Dela, Metallurgii i Stroimaterialov, 1957, v. 10, no. 4.

DESCRIPTORS: *Sulfation, *Lead, Industrial plant, *Flotation, *Sulfuric acid.

Baum [B. A.] Kurochkin [K. I.]. and [Umrikhin, P. V.].
ENTFERNUNG VON WASSERSTOFF AUS FLUESSIGEM STAHL BEIM DURCHBLASEN VON GASEN (Separation of Hydrogen from Liquid Steel during Blowing Operation of Gases). 10p.
Order from TIB $1.80

Trans. in German of Izvestiya Vysshikh Uchebnykh Zavedenii. Chernaya Metallurgiya (USSR) 1961. no. 2, p. 22-31.
Another trans. is avaialble in English f[illegible] TIB $12.60 as HB-5151, Sep 61, 4200 words.

Beck, G.
CONTINUOUS REGULATION OF WIRE DIMENSIONS. Mar 63.
Order from BISI £4 BISI-3133

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 14] p. 952-957.

DESCRIPTORS: Measurement, *Wire, Size, Electric currents.

Berezkina, L. G., Tsvetkov, Yu. V. and Chizhkiov, D. M.
KINETICS OF REDUCTION BY CARBON MONOXIDE OF FREE LEAD OXIDE AND LEAD OXIDE COMBINED IN SILICATES (Kinetika Vosstanovleniya Svobodnoi i Svyazannoi v Silikaty Okisi Svintsa Okisyu Ugleroda). Oct 62 [11]p. 10 refs. RTS 2149.
Order from OTS or SLA $1.60 63-15251

Trans. of Akad[emiya] Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Met[allurgiya] i Toplivo, 1961, no. 2, p. 49-54.

DESCRIPTORS: *Lead compounds, *Oxides, Silicates, Carbon compounds, Monoxides, *Reduction (Chemistry) Reaction kinetics, Metals

Charon, P. and Landgraf, H.
THE PREPARATION OF THE BLAST FURNACE CHARGE AT FORGES DE LA PROVIDENCE. Apr 63.
Order from BISI £5 5s BISI-3088

Trans. of Revue Universelle des Mines (France) 1961 [v. 104, ser. 9] v. 17 [no. 3] p. 99-110.

DESCRIPTORS: *Blast furnaces, Industrial plants,

Delimarskii, Yu. K.
STUDIES OF ELECTROCHEMISTRY OF FUSED SALTS IN NONFERROUS METALLURGY. [1962] 8p.
Order from K-H $10.00 K-H 5866 h

Trans. of Akad[emiya] Nauk URSR [Kiev]. Visnyk, 1955, v. 26, no. 5, p. 36-39.

DESCRIPTORS: *Fuzed materials, *Salts, *Electrochemistry, Metallurgy.

Dzhoshi [V. B.] Vishkarev [A. F.] and [Yavoiskii, V. I.].
DIE ROLLE DER OBERFLACHENSPANNUNG BEI DER VERTEILUNG DES WASSERSTOFFES ZWISCHEN METALL- UND GASPHASE (The Role of Surface Tension During the Distribution of Hydrogen between Metalphase and Gasphase). 8p.
Order from TIB $1.55

Trans. in German of Izvestiya Vysshikh Uchebnykh Zavedenii. Chernaya Metallurgiya (USSR) 1961, no. 3, p. 23-30.

DESCRIPTORS: *Surface tension, *Hydrogen, *Metals, *Gases, Phase studies.

Eminger, Z. and Kletecka, Z.
VACUUM MELTING IN CONSUMABLE-ELECTRODE ARC FURNACES ON LABORATORY SCALE, PT. I. Feb 63, 5700 words.
Order from HB $14.80 HB-5698

Trans. of Hutnicke Listy (Czechoslovakia) 1962, v. 17, no. 9, p. 617-626.

DESCRIPTORS: Steel, Nickel alloys, Chromium alloys, Melting, *Vacuum apparatus, *Electric furnaces, Laboratory equipment.

Erdmann-Jesnitzer, F. and Precht, W.
MAGNETIC MEASUREMENT ON THE AGEING OF IRON DUE TO NITROGEN. Mar 63.
Order from BISI £7 5s BISI-3089

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1962, v. 33 [no. 10] p. 669-678.

DESCRIPTORS: *Aging (Materials), *Iron, Nitrogen, Magnetic fields, Deformation, Diffusion.

Erokhin, A. A.
BASIC STAGES AND METALLURGICAL FEATURES OF THE ARC WELDING PROCESS (Osnovnye Stadii Protsessa Dugovoi Svarki i Ikh Metallurgicheskie Osobennosti). Oct 62 [14]p. 12 refs. RTS 2155.
Order from OTS or SLA $1.60 63-15256

Trans. of Akad[emiya] Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Met[allurgiya] i Toplivo, 1961, no. 2, p. 77-82.

DESCRIPTORS: *Arc welding, *Metallurgy, Metal, Drops, Chemical reactions, Welding fluxes, Electrodes

Georges, J.
ON THE APPEARANCE OF STRIPES OF DIFFERENT TEMPERATURE DURING INDUCTION HEATING. Dec 62.
Order from BISI £4 5s BISI-3055

Trans. of Härterie-Technische Mitteilungen (West Germany) 1961 [v. 16] Apr, p. 1-6.

DESCRIPTORS: Metals, *Induction heating, Temperature.

Grigorev, F. H., Druzhinin, I. I., and Osipov, V. G.
CONTINUOUS CASTING OF 260 TONS OF STEEL WITHOUT INTERRUPTION OF THE POURING STREAM. Dec 62.
Order from BISI £5 BISI-3073

Trans. of #Metallurg (USSR) 1962 [v. 7, no. 7] p. 22.

DESCRIPTORS: *Steel, *Casting.

Gulyanitskaya, Z. F., Petrova, R. N. and Chizhikov, D. M.
HEAT CONTENT OF SLAGS IN THE SYSTEM IRON-OXIDE ZINC-OXIDE SILICA (Teplosoderzhanie Shlakov v Sisteme Zakis' Zheleza-Okis' Tsinka-Kremnezem). Oct 62 [11]p. 12 refs. RTS 2150.
Order from OTS or SLA $1.60 63-15252

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1961, no. 2, p. 55-59.

DESCRIPTORS: *Slags, Heat, Iron compounds, Zinc compounds, Oxides, Quartz, Thermal conductivity, Silicon compounds, Dioxides, *Thermodynamics.

The heat content of the slags in the $FeO-ZnO-SiO_2$ system varies with composition at 1200°C from 208.0 to 290.0 cal/deg, at 1300°C from 217.0 to 306.0 cal/g. The heat content is greatest at 1200° and 1300°C in slags in which the SiO_2-FeO ratio is constant, and smallest in slags where SiO_2 has been substituted by FeO. The addition of up to 30% ZnO to $FeO-SiO_2$ melts reduces their heat content by 13% to 15%. The value of the heat content of the slags is associated with their phase composition. On the $FeO-ZnO-SiO_2$ ternary diagram are given the heat content isotherms at 1300°C. The specific heat of the slags at 1300°C varies with composition within the range 0.17 to 0.25 cal/g.deg. (Author)

Gurevich [Yu. G.]
UNTERSUCHUNG DER DENITRIERUNG VON FLUESSIGEM Cr-Ni-STAHL MIT TITAN UNTER LABORATORIUMSBEDINGUNGEN (Investigation of the Denitration of Liquid Cr-Ni-Steel with Titanium on Laboratory Conditions) 12p.
Order from TIB $2.10

Trans. in German of Izvestiya Vysshikh Uchebnykh Zavedenii. Chernaya Metallurgiya (USSR) 1961, no. 1, p. 21-30.
Another trans. is available in English from HB $12.60 as HB-5135, Nov 61, 4200 words.

DESCRIPTORS: *Denitration, *Chromium alloys, *Nickel alloys, *Steel, *Titanium.

Hollard, M.
CRACKING OF WELDED LIGHT ALLOY ASSEMBLIES. 11 July 51, 11p. (figs. refs. omitted).
Order from SLA $1.60 62-18354

Trans. of Revue de l'Aluminum (France) 1950 [v. 27, no. 166] p. 175-182.

DESCRIPTORS: *Fracture (Mechanics), *Welds, *Alloys, Metals, Welding, Stresses.

Hummitzsch, W. and Dittrich, S.
DETERMINATION OF CRACKS AND OF HYDROGEN IN LOW-ALLOY WELD SEAMS IMMEDIATELY AFTER THEIR GENERATION. Mar 63.
Order from BISI £4 10s BISI-3117

Trans. of Schweissen und Schneiden (West Germany) 1962, v. 14 [no. 3] p. 97-104.

DESCRIPTORS: *Crazing, *Hydrogen, Alloys, *Welds, *Nickel, *Chromium, *Steel, Electrodes, *Welded joints.

Kirmse, H.
MANIPULATORS AND CONVEYING INSTALLATIONS AS A MEANS FOR MECHANIZING THE FORGING OPERATION. Apr 63.
Order from BISI £5 5s BISI-3097

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 23] p. 1655-1661.

DESCRIPTORS: *Forging, *Conveyors, Cargo vehicles, Forge presses, Design, Hoists, Remote control systems.

Kolmogorov, V. L.
UNTERSUCHUNG VON BEARBEITUNGSVERFAHREN DER METALLE DURCH DRUCK NACH DEM VERFAHREN DER PLASTIZITÄTSTHEORIE (Investigation of Tooling Methods for Metals by Pressure According to the Plasticity Theory).
Order from TIB $3.35

Trans. in German of Izvestiya Vysshikh Uchebnykh Zavedenii. Chernaya Metallurgiya (USSR) 1960, no. 9, p. 79-89.

DESCRIPTORS: *Metals, Pressure, *Plasticity, *Theory

Kvyatkovskii, A. N., Esin, O. A. and others.
REDUCTION OF LEAD LOSSES IN SLAGS BY ELECTROCHEMICAL METHODS (Vozmozhost' Snizheniya Poter' Svintsa v Shlakakh Elektrokhimicheskimi Metodami). Nov 62 [12]p. 19 refs. RTS 2148.
Order from OTS or SLA $1.60 63-15250

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk] Izvestiya: Metallurgiya i Toplivo, 1961, no. 2, p. 43-48.

DESCRIPTORS: Reduction, *Lead, *Slags, *Electrochemistry, Smelting, Drops

The electro-capillary movements of drops of lead in molten slags were experimentally determined. The rate of these migrations increases proportionally to the voltage gradient, and depends on the content of bi- and trivalent iron in the slag. When the liquid lead acts as the anode, and a graphite cathode is introduced from above in to the slag, a considerable proportion of the lead can be extracted from the latter within a comparatively short period of time. When the electrical settling tank is supplied with a constant, in place of an alternating current, lead losses in slags are reduced. (Author)

Lapidus, V. A.
CALCIUM CARBONATE AS A CONSTITUENT IN ELECTRODE COATINGS [K Voprosu Tselesoobraznogo Soderzhaniya Mramora v Pokrytii Elektrodov]. [1962] [13]p.
Order from OTS or SLA $1.60 62-20160

Trans. of Avtogennoe Delo (USSR) 1952, v. 23, no. 11, p. 10-13.
Another trans. is available from HB as HB-3225.

DESCRIPTORS: *Calcium compounds, *Carbonates, *Electrodes, *Coatings, Welding, Shielding

The gas-shielding properties of marble in stick-electrode welding depend upon the relative marble contents in the electrode coating. When the marble content is increased beyond a certain small amount, the gas shield is improved. At a certain optimum marble content, the protection against oxidation appears to be of maximum effectiveness. A further increase of the amount of marble in the coating leads to increased oxidation of the molten metal and also of the metal contained in the coating. At excessive marble contents, the oxidation of the metal deposit is considerably greater than when there is no marble at all in the coating. The decrease of the effectiveness of the gas shield against oxidation of the weld metal is accompanied by a greater tendency toward the formation of blowholes due to the reaction between oxygen and carbon. (Author)

Lehnert, W.
SHAPING OF THE HEAT-TREATED PRESTRESSING STEELS St. 140/160. Mar 63.
Order from BISI £2 10s BISI-3078

Trans. of Neue Hütte (East Germany) 1962, v. 7 [no. 3] p. 164-166.

DESCRIPTORS: *Steel, *Material forming, Heat treatment, Stresses, Design.

Leitsin, V. A.
THE BEHAVIOUR OF THALLIUM IN THE HYDROMETALLURGICAL PROCESSES FOR ZINC PROTSESSAKH (Povedenie Talliya v Protesessakh Gidrometallurgichkogo Proizvodstva Tsinka). Nov 62 [9]p. 6 refs. RTS-2176.
Order from OTS or SLA $1.10 63-15278

Trans. of Chelyabinskii Nauch[no]-Issledovatel'skii Inst[itut] Met[allurgii] Sbornik Nauch[no] -Tekh[nicheskikh] Trudov (USSR) 1960, no. 1, p. 120-129.

DESCRIPTORS: *Thallium, Chemical properties, Material separation, *Zinc, Production.

Lonskii, E. D.
THE POSSIBILITY OF ATTAINING EQUILIBRIUM IN THE SLAG-METAL SYSTEM DURING ELECTRIC ARC WELDING. [1962] [18]p. 8 refs.
Order from OTS or SLA $1.60 62-20144

Trans. of Avtomaticheskaya Svarka (USSR) 1958, v. 11, no. 4, p. 72-83.

DESCRIPTORS: *Arc welding, *Electric welding, *Slags, Metals, *Chemical equilibrium

The object of the present investigation was to determine whether the conditions observed in general metallurgical practice also apply in the case of welding. The investigation was carried out in three directions. The composition of the metal and slag formed by the fusion of electrodes with core wires of different grades of steel, of electrodes with different amounts of ferromanganese in the coatings and of electrodes with two-component coatings were investigated. The test procedure was as follows: the 5 mm test electrodes were used to deposit beads on low-carbon steel plates in the downhand position, using a. c. The welding conditions were kept constant throughout. With the UONII-13/55 electrodes d. c. with reverse polarity was used. To eliminate the effect of base metal composition, the weld deposits were made in the form of triplicate 8-pass fillet welds and only the turnings from the top layer were used for analysis. Slag samples were also collected each time. (Author)

Lesnik, A. G.
THERMODYNAMIC PROPERTIES OF ALLOYS OF THE Fe - Cr SYSTEM [Termodinamicheskie Svoistva Splavov Sistemy Fe - Cr]. [1962] 34p. 31 refs.
Order from OTS or SLA $3.60 62-18524

Trans. of [Akademiya Nauk URSR, Kiev. Instytut Metallofizyky. Sbornik Nauchnykh Rabot] 1960 [v. 11] p. 3-21.

DESCRIPTORS: *Thermodynamics, *Alloys, *Iron, *Chromium, Phase studies, Statistical analysis.

Lubcke, Ernst.
ARRANGEMENT FOR THE DAMPING OF THICK-WALLED METAL SHEETS. [1962] [4]p. 1 ref.
Order from OTS or SLA $1.10 62-20017

Trans. of German patent 1,027,896, appl. 6 Jan 56, issued 10 Apr 58, by Siemens-Schuckertwerke.

DESCRIPTORS: *Sheets, *Metal plates, *Damping, Coatings, Adhesion, Reinforcing materials.

The invention concerns an arrangement for the damping of thick-walled sheets, which are provided on one or both sides with a strongly adhering damping layer of damping agent, in which a sheet which is thinner-walled in comparison to the strongly adhering damping layer is introduced to the damping layer. (Author)

Petrov, A. B.
THE EFFECT OF THE IMPURITIES IN ARGON ON THE QUALITY OF ARGON-ARC WELDS. [1962] [18]p.
Order from OTS or SLA $1.60 62-20159

Trans. of Avtogennoe Delo (USSR) 1952, v. 23, no. 9, p. 5-8.

DESCRIPTORS: *Argon, Impurities, *Arc welds, Aluminum alloys, Quality control

Plaksin, I. N. and Shafeev, R. Sh.
NEUE RICHTUNGEN AUF DEM GEBIET DER FLOTATIONSTHEORIE (New Developments in Respect of the Flotation Theory). 13p.
Order from TIB $2.20

Trans. of mono. Soveshchaniye po Ispol'zovaniyu i Obogashcheniyu Kaliinykh Solei Belorussii, Minsk, 1960. Trudy, 1961, p. 98-107.

DESCRIPTORS: *Flotation, Theory

Pomey, J., Royez, A., and Dhez, P.
TESTS FOR THE DETERMINATION OF DRAWABILITY. Mar. 63.
Order from BISI 6 5s BISI-2008

Trans. of Revue de Métallurgie. Mémoires Scientifiques (France) 1960, v. 57 [no. 10] p. 741-754.

DESCRIPTORS: Tests, *Drawing (Machine processing), Test methods, Lubricants.

Ruckenshtein, E.
ZUM PROBLEM DES MECHANISMUS DER WÄRME- UND MASSENUEBERTRAGUNG IN EINER WIRBELSCHICHT (Mechanisms of Heat Transfer in a Fluidized Bed). 28p.
Order from TIB $4.05

Trans. in German of Zhurnal Prikladnoi Khimii (USSR) 1962, v. 35, no. 1, p. 70-80.

DESCRIPTORS: *Heat transfer, *Flotation

Savin, A. V. and Eiduk, Yu. A.
THE PREPARATION OF A POWDER-METALLURGY COBALT-TUNGSTEN ALLOY FOR INSTRUMENT MAKING. 23 Nov 62 [11]p. 2 refs. FTD-TT-62-1265, AD-294 511.
Order from OTS or SLA $1.60 63-15344

Unedited rough draft trans. of [Vsesoyuznyi Nauchno-Issledovatel'skii Institut Tverdykh Splavov. Sbornik Trudov] (USSR) 1960, v. 2, p. 15-23.

DESCRIPTORS: Preparation, *Cobalt alloys, *Tungsten alloys, *Powder metallurgy, Instrumentation, Chemical properties, Powder alloys, Alloys, Microstructure.

Silvaeva, E. V. and Kurbatova, V. I.
BESTIMMUNG VON ZINN IN FERROMOLYBDÄN (Determination of Tin in Ferromolybdenum). 4p.
Order from TIB $1.10

Trans. in German of #Zavodskaya Laboratoriya (USSR) 1961, v. 27, no. 12, p. 1462-1464.

DESCRIPTORS: *Tin, *Iron compounds, *Molybdenum compounds, Determination.

Sulzer, H.
AUTOMATION IN BLAST FURNACES. Mar 63.
Order from BISI £3 5s BISI-3080

Trans. of lecture given to Centre d'Études Superieurs de la Siderurgie, n.p., 3 Apr 62.

DESCRIPTORS: *Blast furnaces, Automation.

Tarnovskii, I. Y., Pozdeev, A. A., and Meandrov, L. V.
PHYSICAL EQUATIONS OF THE MECHANICS OF BODIES UNDERGOING DEFORMATION IN THE THEORY OF PLASTIC WORKING OF METALS. [1962] 12p. (figs. omitted) 9 refs. [DSIR NLL] M 3653.
Order from OTS or SLA $1.60 62-25302

Trans. of Izvest[iya] Vys[shikh] Ucheb[nykh] Zaved[enii]. Chernaya Met[allurgiya] (USSR) 1961, no. 4, p. 67-78.
Another trans. is available from BISI £4 5s as BISI-2557, Mar 62.

DESCRIPTORS: *Metals, *Deformation, Plasticity, Equations, Mechanics.

Teterin, P. K., Klyamkin, N. L. and others.
PRODUCTION OF DOUBLE-LAYER BRAZED (BUNDY-TYPE) TUBING. Mar 63.
Order from BISI £4 10s BISI-3181

Trans. of Stal' (USSR) 1958 [v. 18, no. 8] p. 722-726.

DESCRIPTORS: *Pipes, Production, Copper coatings, Brazing, Economics.

Teumin, I. I.
METHODIK UND BESONDERE VERHÄLTNISSE BEIM ANLEGEN ELASTISCHER SCHWINGUNGEN AN METALLEGIEURNGEN (Methodology and Special Conditions on Applying Elastic Vibrations to Metal Alloys). 11p.
Order from TIB $2.00

Trans. in German of Akademiya Nauk SSSR. Otdelenie Teknicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo, 1961, no. 1, p. 24-30.

DESCRIPTORS: *Vibration mechanisms, Elasticity, *Metals, *Alloys

Tsukamoto, T., Nagata, Y., and Tanaka, I.
ON THE PREVENTION OF CRACKS ON LOW-CARBON RIMMED SLABS FOR A STRIP MILL. Mar 63.
Order from BISI £5 10s BISI-2779

Trans. of Tetsu to Hagane (Japan) 1960, v. 46 [no. 10] p. 1259-1261.

DESCRIPTORS: *Crazing, Carbon, *Steel, Castings, *Rolling mills, Sulfur, Aluminum, Sodium compounds, Fluorides, Coatings, Molding, Temperature.

Tumanov, A. K.
MAGNETMETHODE ZUR CHROMBESTIMMUNG IN FERROCHROM (Magnetic Method to Determine Chrome in Ferrochrome). 3p.
Order from TIB $0.95

Trans. in German of #Zavodskaya Laboratoriya (USSR) 1961, v. 27, no. 8, p. 998-999.

DESCRIPTORS: Magnetism, Determination, *Chromium, *Iron alloys, Chromium alloys.

Uhlmann, Fr. W.
BORON CARBIDE LAPPING AGENTS FOR PRECISION WORK. [1962] 9p. (figs. tables [refs.] omitted).
Order from SLA $1.10 63-10021

Trans. of Metall (West Germany) 1952 [v. 6] Sep, p. 530-534.

DESCRIPTORS: *Boron compounds, *Carbides, *Abrasives, *Precision finishing, Grinding wheels, Intake valves, Exhaust valves, Differentials (Mechanical), Bearings, Combustion chamber liners, Cutting tools, Carbide tools, Cutting fluids.

Vashchenko [K. I. and Rudoi, A. P.].
EINFLUSS DES KOHLENSTOFFES UND DES SILICIUMS AUF DIE OBERFLACHENSPANNUNG VON GUSSEISEN (The Influence of Carbon and Silicon on the Surface Tension of Cast Iron). 5p.
Order from TIB $1.20

Trans. in German of Izvestiya Vysshikh Uchebnykh Zavedenii. Chernaya Metallurgiya (USSR) 1961, no. 3, p. 11-15.
Another trans. is available in English from HB $5.70 as HB-5165. Aug 61, 1900 words.

DESCRIPTORS: *Carbon, *Silicon, Surface tension, *Cast iron

Verchenko, V. R., Petrov, A. V., and Baranov, M. I.
[AUTOMATIC WELDING OF FIXED POSITION PIPE FITTINGS (Avtomaticheskaya Svarka Nepovorotnykh Stykov Trub)]. [1962] [14]p.
Order from OTS or SLA $1.60 62-20133

Trans. of Svarochnoe Proizvodstvo (USSR) 1956, no. 6, p. 22-26.
A trans. in Spanish is available from OTS or ETC $1.55 as 62-26265, CID 62-65, 22p.

DESCRIPTORS: *Pipe fittings, *Welding, Automatic.

Vernisse, P., Schwartz, G., and Dancoisne, P.
SIMPLE PROBE TECHNIQUE IN THE BLAST FURNACE STACK. Mar 62.
Order from BISI £4 10s BISI-2141

Trans. of IRSID, Minerai-Coke-Fonte [sic] 1960, Oct, RP50.

DESCRIPTORS: *Blast furnaces, *Exhaust systems, Test methods.

Vigdorovich, V. N., Ivleva, V. S. and Krol', L. Ya.
INTERACTION OF IMPURITIES DURING THE ZONE RECRYSTALLIZATION OF ANTIMONY (O Vzaimodeistvii Primesei pri Zonnoiperekristallizatsii Sur'my). Nov 62 [10]p. 8 refs. RTS 2154.
Order from OTS or SLA $1.10 63-15269

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Metallurgiya i Toplivo, 1961, no. 2, p. 72-76.

DESCRIPTORS: *Antimony, *Recrystallization, Impurities, Tin, Bismuth, Zone melting

Vogel, F.
A NEW SUPERSONIC DEVICE FOR USE IN FOUNDRIES. [1962] 3p. (figs. omitted) 3 refs.
Order from SLA $1.10 63-10015

Trans. of Metall (West Germany) 1948 [v. 2, no. 13/14] p. 229-230.

DESCRIPTORS: *Magnetostriction, *Supersonic characteristics, *Sound generators, *Foundries, Oscillation, Colloids, Alloys, Metals, Crystal structure, Mettallography, Design, Magnetostrictive elements.

Vogels, H. A., Dahl, W. and others.
THE COMBINED ACTION OF DEFORMATION CONDITIONS, SEGREGATIONS AND INCLUSIONS IN THEIR EFFECT ON THE PROPERTIES OF COARSE PLATES ASCERTAINED BY LONGITUDINAL AND TRANSVERSE TESTS. Mar 63.
Order from BISI 7 BISI-3102
Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1962, v. 33 [no. 10] p. 649-659.

DESCRIPTORS: *Metal plates, *Steel, Deformation, Silicon, Aluminum, Cerium, Titanium.

Zavaritskii, N. V. and Zel'dovich, A. G.
THERMAL CONDUCTIVITY OF TECHNICAL MATERIALS AT LOW TEMPERATURES. [1962] [8]p. 11 refs.
Order from OTS or SLA $1.10 62-18332

Trans. of #Zhurnal Tekh[nicheskoi] Fiz[iki] (USSR) 1956, v. 26 [no. 9] p. 2032-2036.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 61-10156 [1960] 8p.

DESCRIPTORS: *Graphite, *Copper alloys, *Stainless steel, *Heat transfer, Measurement, Thermal conductivity.

For abstract see Technical Translations 5:87, 1961

Ferrous Metals

Ageev, N. P.
DER EINFLUSS DER TEMPERATUR UND DER GESCHWINDIGKEIT AUF DIE UMFORMFESTIGKEIT VON STÄHLEN (The Effect of Temperature and Speed on the Deformation Strength of Steel).
Order from TIB $1.30

Trans. in German of Kuznechno-Shtampovochnoe Proizvodstvo (USSR) 1961, v. 3, no. 9, p. 1-4.

DESCRIPTORS: *Temperature, *Velocity, *Steel, Deformation, Mechanical properties.

Bergh, S.
OXYGEN CONTENT AND OXIDES IN A SILICON KILLED STEEL. Mar 63.
Order from BISI £3 15s BISI-3140

Trans. of Jernkontoret [Stockholm]. Annaler (Sweden) 1962, v. 146, no. 9, p. 748-762.

DESCRIPTORS: *Oxygen, *Oxides, *Silicon, *Steel.

Dehne, W. and Günther, H.
STUDIES ON THE POSSIBILITIES OF REMOVING THE DUST FROM BOTTOM BLOWN BASIC STEEL CONVERTORS. Apr 63.
Order from BISI £5 10s BISI-2911

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 12] p. 762-771.

DESCRIPTORS: *Dusts, *Steel, Industrial plants, Electric filters.

Filippov [S. I.] and Martinov [S. Z.].
DIE KINETISCHEN GESETZMASSIGKEITEN DER DIREKTEN OXYDATION VON BEIMENGUNGEN IN GESCHMOLZENEM EISEN (Kinetic Interrelationships of Direct Oxidation of Admixtures in Molten Iron). 8p.
Order from TIB $1.55

Trans. in German of Izvestiya Vysshikh Uchebnykh Zavedenii. Chernaya Metallurgiya (USSR) 1961, no. 1, p. 5-11.
Other translations are available in English from HB $7.25 as HB-5134, July 61, 2700 words and in German from TIB $1.85

DESCRIPTORS: *Oxidation, Additives, Melting, Iron industry.

Hagitay, S.
KOKILLENGIESSEN VON GUSSEISEN MIT LAMELLENGRAPHIT (Chill Casting of Iron with Laminated Graphite). 10p.
Order from TIB $1.80

Trans. in German of Ontode (Hungary) 1962, v. 13, no. 1, p. 20-23.

DESCRIPTORS: *Iron casting, Laminates, *Graphite.

Harms, F. and Riemann, W.
MEASUREMENT OF FUMES AND DUST VOLUMES FROM 70-TON ELECTRIC ARC FURNACES OPERATED PARTIALLY ON OXYGEN. Dec 62, 2800 words.
Order from HB $8.40 HB-5719

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, no. 20, p. 1345-1348.

DESCRIPTORS: *Waste gases, *Electric furnaces, *Dusts, Smokes, *Oxygen, Injection, *Steel, Production.

Jensfelt, N. and Norrman, T. O.
BISMUTH AND ITS EFFECT ON HOT WORKABILITY OF STAINLESS STEEL. Mar 63.
Order from BISI £4 BISI-3155

Trans. of Jernkontoret [Stockholm]. Annaler (Sweden) 1962, v. 146, no. 6, p. 438-452.

DESCRIPTORS: *Bismuth, Hot working, *Stainless steel, Molybdenum, Austenite, Alloys.

Khoroshev, I. I.
MECHANISMUS DER ENTSTEHUNG VON GRAPHIT-KEIMEN BEIM GLUEHEN VON WEISSEM TEMPER-GUSS BEI NIEDRIGEN TEMPERATUREN (The Mechanism of Graphite Nucleation During Annealing of White-heat Melleable Iron at Low Temperatures). 12p.
Order from TIB $2.10

Trans. in German of Izvestiya Vysshikh Uchebnykh Zavedenii. Chernaya Metallurgiya (USSR) 1962, no. 1, p. 171-176.

DESCRIPTORS: *Graphite, Heat treatment, *Iron castings, Temperature.

Kidin, I. N.
VORAUSSETZUNGEN FUER DIE INDUKTIVE WAER-MEBEHANDLUNG VON SCHNELLARBEITSSTAHL. (Conditions for the Inductive Heat Treatment of High-speed Steel).
Order from TIB $1.80

Trans. in German of Izvestiya Vysshikh Uchebnykh Zavedenii. Chernaya Metallurgiya (USSR) 1960, no. 2, p. 112-117.

DESCRIPTORS: *Induction heating, Heat treatment, *Steel

Kompaneitsev, N. A. and Sadovskii, V. D.
IMPROVING THE STRUCTURE AND FRACTURE OF CASE ALLOY STEELS BY HEAT TREATMENT. [1962] 10p.
Order from ATS $13.50 ATS-07P62R
Trans. of Akad[emiya] Nauk SSSR. Inst[itut] Fiz[iki] Metal[lov, Sverdlovsk]. Trudy, 1958, no. 20, p. 329-338.
Another trans. is available from OTS $5.50 in AEC-tr-4513, Feb 62, 479p.

DESCRIPTORS: Heat treatment, Structural properties, Fracture (Mechanics), Alloys, *Steel.

Meccaci, G. and Violi, G.
THE USE OF OXYGEN FOR INCREASING PRODUCTION IN THE OPEN-HEARTH FURNACE. Mar 63.
Order from BISI £5 10s BISI-3069

Trans. of Radex-Rundschau (Austria) 1962, no. 5, p. 250-270.

DESCRIPTORS: *Open hearth furnace, Production, *Oxygen, *Steel.

Mietzner, K.
INVESTIGATIONS ON THE SURFACE FINISH OF DRAWN STEEL BARS. Mar 63.
Order from BISI £5 10s BISI-3172

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 21] p. 1423-1432.

DESCRIPTORS: *Finishes and finishing, Surface properties, *Steel, Rods, Drawing (Machine processing).

Mitarashi, Y. and Fujimaki, H.
MECHANICAL CAPPED STEEL FOR HOT-ROLLED SHEET. Mar 63.
Order from BISI £5 5s BISI-2780

Trans. of Tetsu to Hagane (Japan) 1960, v. 46 [no. 10] p. 1219-1221.

DESCRIPTORS: *Steel, Hot working, Sheets, Aluminum, Failure (Mechanics), Castings.

Mitarashi, Y. and Morita, S.
OPERATING RESULTS OF THE NEW TOBATA (JAPAN) BASIC OXYGEN (LD) PLANT. [July 61] 1500 words.
Order from HB $4.50 HB-5247

Trans. of Tetsu to Hagane (Japan) 1960, v. 46, no. 10, p. 1180-1182.

DESCRIPTORS: *Blast furnaces, *Oxygen, Operation, *Steel, Production.

Paczula, B.
DECARBURISATION AND NITRIDING OF FERRO-ALLOYS IN POLAND. Dec 62.
Order from BISI £2 15s BISI-3051

Trans. of Freiberger Forschungshefte. [Reihe] B. [Huttenwesenmetallurgie] (West Germany) 1962, v. 68, June, p. 71-79.

DESCRIPTORS: *Iron alloys, Carbon, Separation, Nitrides, Furnaces, Heat transfer, *Hardening, Poland.

Pawelski, O.
INFLUENCE OF CHEMICAL COMPOSITION AND PRE-TREATMENT ON THE STRAIGHTENING FORCE, THE CHANGE IN ROD DIAMETER AND THE MECHANICAL PROPERTIES WHEN ROLL STRAIGHTENING COLD-DRAWN STEEL. Apr 63.
Order from BISI £6 BISI-3062

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 21] p. 1410-1422.

DESCRIPTORS: *Steel, Mechanical properties, Chemical analysis, Carbon, Heat treatment, Drawing (Machine processing), Hardness. Stresses.

Peter, W. and Finkler, H.
CONSIDERATIONS IN THE POSSIBILITY OF PRODUCING A BANDFREE STRUCTURE. Mar 63.
Order from BISI £5 BISI-3149

Trans. of Härterie-Technische Mitteilungen (West Germany) 1961, v. 16, no. 3, p. 137-146.

DESCRIPTORS: Austenite, *Steel, Production, *Grain structures (Metallurgy), Ferrites, Pearlite, Heat treatment, Transformations. Structural properties

Plockinger, E. and Randak, A.
INVESTIGATIONS OF THE DEOXIDATION OF HIGH CARBON OPEN-HEARTH STEELS WITH FERROSILICON, ALUMINIUM AND CALCIUM SILICON. Jan 63.
Order from BISI £7 BISI-2993

Trans. of Radex Rundschau (Austria) 1957, no. 5/6, p. 754ff.

DESCRIPTORS: *Steel, Open hearth furnaces, *Deoxidation, Iron alloys, Silicon alloys, Carbon alloys, Aluminum alloys, Calcium alloys

Plockinger, E.
SPECIAL MELTING PROCESSES AND STEEL PROPERTIES. Mar 63.
Order from BISI £ 5 BISI-3120

Trans. of Radex-Rundschau (Austria) 1962, no. 6, p. 291-302.

DESCRIPTORS: *Steel, Chemical properties, *Melting, Processing, Cleaning, Vacuum furnaces, Casting, Electro slag process, Degasification, Purification, Gases, Slags, Crystallization.

Pridantsev, M. V. and Lanskaya, K. A.
PRODUCTION AND USE OF HIGH-TEMPERATURE TUBE STEELS. Mar 63.
Order from BISI £ 3 15s BISI-3108

Trans. of Teploenergetika (USSR) 1962 [v. 9] no. 8, p. 2-6.

DESCRIPTORS: Production, *Steel, Pipes, Pearlite, Chromium, Stainless steel, Austenite, *Heat-resistant alloys.

Reutov, N. N.
DIE CHEMISCHE HETEROGENITÄT VON SCHLEUDER GUSSTUECKEN AUS STAHL (Chemical Heterogeneity of Centrifugal Steel Castings). 5p.
Order from TIB $1.20

Trans. in German of Liteinoe Proizvodstvo (USSR) 1960, no. 1, p. 35-36.
Another trans. in English is available ; from HB $3.80 as HB-5044, Apr/May 61, 1050 words.

DESCRIPTORS: Chemical properties, *Steel, *Castings.

Sapiro, L. S.
UTILIZATION OF STEAM AS A SHIELDING MEDIUM IN ARC WELDING. [1962] [2]p. (figs. omitted)
Order from OTS or SLA $1.10 62-20143

Trans. of #Avtom[aticheskaya] Svarka (USSR) 1959, v. 12, no. 10, p. 38-39.

DESCRIPTORS: *Steel, *Castings, *Arc welding, *Shielding, *Steam

Starodubov, K. F. and Borkovskii, Yu. Z.
THE EFFECT OF HEAT TREATMENT ON THE COLD BRITTLENESS OF LOW-CARBON STEEL (Vliyanie Termicheskoi Obrabotki na Khladnolomkost' Nizkouglerodistoi Stali) tr. by L. Meyer. Jan 62 [5]p. 2 refs. S. M. R. E. Trans. no. 4653; [DSIR] NLL M. 3669.
Order from OTS or SLA $1.10 62-25267

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chernaya Metallurgiya (USSR) 1961, no. 1, p. 166-170.

DESCRIPTORS: *Steel, Brittleness, *Heat treatment, Hardening.

Steininger, Z.
THEORETICAL AND PRACTICAL POSSIBILITIES TO INCREASE THE OUTPUT OF THE STEEL WIRE PATENTING PROCESS. Mar 63.
Order from BISI £4 10s BISI-3038

Trans. of Hutnik (Poland) 1961 [v. 28, no. 3] p. 85-91

DESCRIPTORS: Industrial production, *Steel, *Wire, Heat treatment.

Takamuka, M., Tsuda, S. and others.
CAPPED RIMMED STEEL AND ITS DEEP DRAWING PROPERTIES. Mar 63.
Order from BISI £4 10s BISI-2781

Trans. of Tetsu to Hagane (Japan) 1960, v. 46 [no. 10] p. 1280-1282.

DESCRIPTORS: *Steel, Castings, Sheets, Chemical analysis, Mechanical properties, Drawing (Machine processing).

Toitot, M., Roques, C., and Bastien, P.
THE INFLUENCE OF ADDITION ELEMENTS ON THE MAGNETIC PROPERTIES OF FORGED STEELS. Apr 63.
Order from BISI £3 10s BISI-3107

Trans. of Revue de Métallurgie (France) 1962, v. 59 [no. 7/8] p. 631-637.

DESCRIPTORS: *Steel, Magnetic properties, Alloys, *Magnetic fields, Carbon, Sulfur, Manganese, Nickel, Chromium, Molybdenum.

Trömel, G. and Schwerdtfeger, K.
INVESTIGATIONS ON THE IRON - PHOSPHORUS - OXYGEN SYSTEM. Mar 63.
Order from BISI £3 10s BISI-3162

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1963, v. 34 [no. 1] p. 55-59.

DESCRIPTORS: *Iron, *Phosphorus, *Oxygen, Melting, Thermodynamics, Grain structure (Metallurgy) Phase studies, Slags, Phosphates.

Wahlster, M.
OXIDE INCLUSIONS IN LIQUID AND SOLID STEEL. Dec 62.
Order from BISI £6 10s BISI-3050

Trans. of Freiberger Forschungshefte. [Reihe] B. [Huttenwesenmetallurgie] (West Germany) 1962, v. 68, June, p. 47-70.

DESCRIPTORS: *Steel, Solids, *Liquid metals, Impurities, Oxides, Deoxidation.

Light Metals

DEFORMABLE ALUMINUM ALLOYS: SELECTED ARTICLES. 31 Dec 62 [25]p. 22 refs.
FTD-TT-62-1272.
Order from OTS or SLA $2.60 63-15567

Unedited rough draft trans. of mono. Deformiruemye Alyuminievye Splave: Sbornik Statei, Moscow, 1961, p. 131-136 and 189-199.

DESCRIPTORS: *Aluminum alloys, Deformation, Thermal stresses, Heat treatment, *Forging, Quenching (Cooling), Fracture (Mechanics), Casting, Crystallization, *Magnesium alloys.

Contents:
Features of the thermal treatment of heavy forgings Dl alloy, by V. I. Isaev and others
Hot cracking of alloys of the V95 type, by I. I. Novikov and A. E. Semenov
Some features of obtaining ingots from the alloys AMg5V and AMg6, by V. A. Livanov and others

Belyaev, A. I.
ELEKTROLYT FUER INDUSTRIELLE ALUMINIUM-BÄDER UND MÖGLICHKEITEN ZU SEINER VERBESSERUNG. (Electrolyte for Industrial Aluminum Baths and Possibilities to Improve It). 18p.
Order from TIB $2.80

Trans. in German of Tsvetnye Metally (USSR) 1956 [v. 29] no. 5, p. 54-60.

DESCRIPTORS: *Electrolytes, *Aluminum.

Pavlov, I. M., Sigalov, Yu. M. and others.
INVESTIGATION OF THE HOT ROLLING OF ALUMINIUM IN VACUUM AND IN AIR (Issledovanie Protsessa Goryachei Prokatki Alyuminiya v Vakuume i na Vozdukhe). Nov 62 [8]p. 7 refs. RTS-2152.
Order from OTS or SLA $1.10 63-15254

Trans. of Akad[emiya] Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Met[allurgiya] i Toplivo, 1961, no. 2, p. 64-67.

DESCRIPTORS: Hot working, *Aluminum, Vacuum apparatus, Air, Friction, Rolling mills

The friction coefficient is greater when aluminium is rolled in vacuum than when it is rolled in air. The greatest difference (~ 1.4 times) was obtained at small reduction . In pressure working of metals, the friction coefficient falls with the rise of specific pressure both for rolling in air and in vacuum. (Author)

Rempel', S. I. and Popov, R. B.
DETERMINATION OF THE CURRENT EFFICIENCY IN INDUSTRIAL ELECTROLYSERS TO OBTAIN ALUMINUM BY MEANS OF RADIOACTIVE INDICATORS. [1961] 13p. 1 ref. MDF R 115.
Order from OTS or SLA $1.60 62-19854

Trans. of Tsvetnye Metally (USSR) 1956 [v. 29, no. 3] p. 50-58.

DESCRIPTORS: *Nuclear industrial applications, *Tracer studies, *Aluminum, Production, *Electrolytic cells, Electric currents.

Shilova, E. I. and Nikitaeva, O. G.
THE EFFECT OF SMALL DEGREES OF PLASTIC STRAIN ON PROPERTIES OF D16 ALUMINIUM ALLOY WITH DIFFERENT GRAIN SIZES (Vliyanie Malykh Stepenei Plasticheskoi Deformatsii na Svoistva Alyuminievogo Splava D16 s Razlichnoi Velichinoi Zerna). Oct 62 [10]p. 15 refs. RTS 2153.
Order from OTS or SLA $1.10 63-15255

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Metallurgiya i Toplivo, 1961, no. 2, p. 68-71.

DESCRIPTORS: Tensile properties, Plasticity, *Aluminum alloys, Grain structure (Metallurgy), Cold working, Mechanical properties

Structural Metallurgy and Corrosion

Akol'zin, P. A. and Mikhailova, N. M.
HYDRAZINE WATER TREATMENT FOR PROTECTING BOILER METAL AGAINST CORROSION. [1962] [11]p. 7 refs. C. E. Trans. 2634; [DSIR] NLL M. 8896.
Order from OTS or SLA $1.60 63-15193

Trans. of Teploenergetika (USSR) 1960 [v. 7] no. 7, p. 59-64.

DESCRIPTORS: Protective treatments, *Hydrazines, Feed water, *Corrosion inhibition, *Boilers.

Koselev, I. and Burda, S.
INTERNAL CRACKS IN [STEEL] FORGINGS, PT. I.
Feb. 63, 4600 words.
Order from HB $12.50 HB-5699

Trans. of Hutnik (Czechoslovakia) 1962, v. 12, no. 4, p. 180-184.

DESCRIPTORS: *Steel, Forging, *Fracture (Mechanics), Microstructure, Stresses.

Levitin, V. V. and Tananaeva, A. N.
ZUR THEORIE DER INTERKRISTALLINEN KORROSION ROSTFREIER STÄHLE (On the Theory of Intercrystalline Corrosion of Rustproof Steels).
Order from TIB $1.55

Trans. in German of Fizika Metallov i Metallovedenie (USSR) 1962, v. 13, no. 1, p. 82-85.

DESCRIPTORS: Crystals, *Corrosion, *Stainless steel, Theory

Lyashenko, V. S., Zotov, V. V. and Ivanov, V. A.
RESISTANCE TO CORROSION OF AUSTENITIC AND FERRITO-PEARLITIC STEELS IN A STREAM OF LIQUID SODIUM AT TEMPERATURES OF 600°C and 700°C (Korrozionnaya Stoikost Austenitnykh i Ferritoperlitnykh Stalei v Potoke Zhidkogo Natriya pri Temperaturakh 600 i 700°C). [1962] 19p. 6 refs.
Order from OTS or SLA $1.60 AEC-tr-5409

Trans. of mono. International Atomic Energy Agency Conference on Corrosion of Reactor Materials, Salzburg, 4-9 June 62. [Proceedings] paper CN-13/50.

DESCRIPTORS: *Corrosion, *Steel, *Sodium, Temperature, Austenite, Pearlite, Stainless steel, *Mechanical properties, Microstructure, Grain structures (Metallurgy), Ferrites, *Heat exchangers.

Meyer, G.
CHROMIC PHOSPHATE AND OTHER PHOSPHATE PIGMENTS AS MODERN CORROSION INHIBITORS.
Apr 63.
Order from BISI £3 10s BISI-3123

Trans. of Farbe und Lack (West Germany) 1962, v. 68, no. 5, p. 315-321.

DESCRIPTORS: *Corrosion inhibition, *Pigments, *Phosphates, *Chromium compounds, Physical properties, Toxicity, Primers, Binders, Vinyl radicals.

Nedumov, N. A. and Rabezova, V. I.
INVESTIGATION OF ALLOYS OF THE NIOBIUM-ALUMINUM SYSTEM. [1962] 4p. (figs. omitted) 3 refs.
Order from OTS or SLA $1.10 63-10129

Trans. of [Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo] 1961, no. 4, p. 68-70.

DESCRIPTORS: *Niobium alloys, *Aluminum alloys, Heat resistant metals and alloys, Intermetallic compounds, Microstructure.

An investigation was carried out on alloys of the Nb-Al system by means of microstructural, Roentgenostructural, Roentgenostructural, and thermal analyses. A diagram was constructed showing the state of the alloys of the Nb-Al system (up to 50% Al in weight). Formation of three intermetallic compounds was demonstrated: Nb_3Al was formed by peritectic reaction at $\sim 2060^{\circ}$, and Nb_2Al and $NbAl_3$ were formed from fusions, the former at $\sim 1800^{\circ}$ and the latter at $\sim 1750^{\circ}$. In the Nb-Al system up to 50% Al in weight there were four solid phase areas: terminal niobium solid solution and three compounds. (Author)

Oeteren, K. A. van.
HOT GALVANISING AND COAT OF PAINT AS AN IDEAL PROTECTIVE SYSTEM AGAINST CORROSION.
Mar 63.
Order from BISI £3 10s BISI-3148

Trans. of Metall-Reinigung Vorbehandlung (West Germany) 1962, v. 11 [no. 1] p. 1-8.

DESCRIPTORS: *Paints, Protective treatments, *Corrosion inhibition, Surface properties, Adhesion, *Steel, Zinc, Errors, Metallurgy.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

ÉNERGIE ATOMIQUE [ATOMIC ENERGY] 1962, VOL. 12, NO. 2: [SELECTED ARTICLES]. [1962] [74]p. refs. (text in French).
Order from OTS or SLA $7.60 62-33252

Trans in French of #Atomnaya Energiya (USSR) 1962, v. 12, no. 2, p. 111-170.

DESCRIPTORS: *Cyclotrons, Magnetic fields, *Fast neutrons, *Neutron flux, Neutron spectroscopy, *Nuclear reactors, Integral equations, *Health physics, *Uranium, *Ores (Metal sources), *Flotation, *Linear accelerators, *Electron accelerators, *Fission products, Energy, *Neutron age, Radiation measurement systems, *Nuclear spectroscopy, *Computers, Semiconductor devices, *Neutron cross sections.

Contents:
Utilization du principe d'autocorrection du champ magnétique dans les accélérateurs cycliques de très hautes énergies, by E. L. Burstein, A. A. Vassiliev, and others.
Spectre énergétique des neutrons rapides et répartition du flux des neutrons thermiques dans le canal expérimental du réacteur VVR. by N. V. Zvonov, A. I. Miskevich, and others.
Conditions d'application des fonctions de transfert aux calculs d'un réacteur nucléaire. by P. Kovanitz.
Application des méthodes de calcul multigroupe pour les protections biologique. by D. L. Broder, A. P. Kondrashov, and others.
Emploi d'un collecteur a base d'acides gras pour la flottation de l'uraninite. by L. A. Grekulova.
Un accélérateur linéaire d'electrons. by G. I. Zhileiko.
Energies cinétiques comparées des produits de fission de ^{238}U, provoquée par les neutrons de 3 et 15 MeV. by I. A. Baranov, A. N. Protopopov, and others.

Nouvelles mesures de l'âge des neutrons de fission du ^{235}U dans les substances hydrogénées. by L. N. Yurova, A. A. Poliakov, and others.

Utilisation des compteurs spectrométriques à semiconducteurs pour la mesure de l'énergie des fragments de fission. by N. M. Kazarinov, O. A. Matveev and others.

Effet produit par un absorbeur à résonance sur la capture des neutrons en cours de ralentissement by un noyau dont la section efficace de capture varie régulièrement. by T. V. Golashvili.

ENERGIE ATOMIQUE [ATOMIC ENERGY] 1962, VOL. 12, NO. 3: [SELECTED ARTICLES]. [1962] [100]p. refs. (text in French).
Order from OTS or SLA $8.60 62-33253

Trans. in French of #Atomnaya Energiya (USSR) 1962, v. 12, no. 3, p. 193-261ff.

DESCRIPTORS: *Gamma-ray spectroscopy, *Synchrotrons, Stabilization, *Gamma rays, Distribution, *Radiological contamination, *Reactor fuel elements, Thermal stresses, *Thermonuclear reactions, *Betatrons, *Electron lenses, *Particle accelerators, *Fast neutrons, *Fission products, Determination, *Beta particles, Absorption.

Contents:

Spectre du rayonnement de freinage des électrons de 260 MeV, by Yu. M. Ado, K. A. Belovintzev and others

Circuit de stabilisation de l'énergie d'un synchrotron ayant une tension de référence variable, by O. V. Bogdankevich

Répartition spatiale dans l'eau des quanta-γ de diffusion multiple, provenant de sources monodirectionnelles ^{198}Au, ^{60}Co, ^{24}Na, by V. I. Kukhtevich and B. P. Shemetenko

Passage de rayonnement à travers les fentes, by V. N. Mironov

Etudes physiques de la protection contre les rayonnements (Résumé), by O. I. Leipunsky

Chocs thermiques sur les gaines des éléments combustibles, by O. D. Kazachkovsky

Champ de rayonnement d'une source ponctuelle dirigée de rayons-γ, by L. R. Kimel and O. I. Leipunsky

Vitesse des réactions thermonucléaires, by B. N. Kozlov

Stéréotron à focalisation à l'aide d'un champ magnétique mobile du type "navette", by B. N. Rodimov

Utilisation des lignes de retard a onde progressive dan la technique des accélérateurs, by A. A. Vorobiev and A. N. Didenko

Distribution angulaire des neutrons rapi- des diffusés par les noyaux légers, by A. G. Gusseinov and M. N. Nikolaev

Méthode statistique d'identification des produits de réactions nucléaires de différente multiplicité, by B. I. Goriachev

Effets d'absorption et d'auta-absorption du rayonnement rayonnement-β, by M. P. Beldy

Spectres des rayons-γ dans le canal expérimental horizontal du réacteur VVR-M (Résumé), by I. F. Barchuk, G. V. Belykh and others.

Broder, D. L., Kondrashov, A. P. and others.
DER EINFLUSS BOR ENTHALTENDER SCHICHTEN AUF DIE AUSBEUTE DER SEKUNDAREN GAMMA STRAHLUNG (The Effect of Layers with Boron Content on the Secondary Gamma-ray Yield).
Order from TIB $1.30

Trans. in German of Atomnaya Energiya (USSR) 1960, v. 8, no. 1, p. 49-51.

DESCRIPTORS: *Boron, *Gamma rays, Secondary emission, Surface area

Destriau, G. and Mattler, J.
DETERMINATION OF THE TRANSIENT EMISSION OF CERTAIN SULFIDES: APPLICATION TO ELECTROPHOTORADIOGRAPHY (Établissement de l'Illumination Fugage de Certains Sulfures. Application a l'Electrophotoradiographie). [Feb 63] 12p.
Order from ATS $13.50 ATS-31P66F

Trans. of J[ournal de] Phys[ique et le Radium] (France) 1946 [ser. 8] v. 7, no. 9, p. 259-263.

DESCRIPTORS: *Sulfides, Emissivity, *Radiography, Electrophotography.

Herr, W.
CARRIER-FREE SEPARATION OF THE RADIOISOTOPES OF RARE EARTHS OBTAINED BY NEUTRON CAPTURE REACTION. [1962] 6p. 11 refs.
Order from SLA $1.10 62-18702

Trans. of Angewandte Chemie (West Germany) 1953, v. 65 [no. 11] p. 303-304.

DESCRIPTORS: *Isotope separation, *Radioactive isotopes, Tracer studies, *Rare earths, *Neutron capture, Neutron reactions

Laskorin, B. N., Yakubovich, E. A. and others.
EXTRACTION AS A MEANS OF RECOVERING URANIUM AND RARE METALS FROM WATER SOLUTIONS. [1962] 13p. 54 refs.
Order from OTS or SLA $1.60 AEC-tr-5327

Trans. of #Atomnaya Energiya (USSR) 1962, v. 12, no. 6, p. 503-513.

DESCRIPTORS: *Uranium, *Material separation, Recovery, *Metals, Radiochemistry, Purification, Ultrasonic radiation, Oscillation, Separation.

This article discusses the direction of development and the possibilities for scaling operation of extractors of the mixer-settler type. Extraction processes in such apparatus, their construction, and the results of tests of mixer-settler box type reactors with mechanical and air agitation, which have in recent years obtained especially wide application in the uranium ore and radiochemical separation industry are described.

Nikitin, B. A.
RADON HYDRATE. 8 Dec 61, 18p. 26 refs.
Order from SLA $1.60 63-10117

Trans. of Z[eitschrift für] Anorg[anische] Chem[ie] (Germany) 1936, v. 227, p. 81-93.

DESCRIPTORS: *Radon, Gases, *Hydrates, Dissociation, Heat of formation, Helium group gases, Complex compounds.

Pekhtashev, E. S. and Voznesenskii, S. A.
THE SOLUBILITY OF INORGANIC SALTS IN ORGANIC SOLVENTS AND IN THEIR MIXTURES WITH WATER. [1962] 10p. 9 refs.
Order from OTS or SLA $1.10 AEC-tr-5574

Trans. of [Izvestiya Vysshikh Uchebnykh Zavedenii. Khimiya i Khimicheskaya Tekhnologiya] (USSR) 1959 [v. 2] no. 6, p. 827-833.

DESCRIPTORS: *Salts, Inorganic substances, *Solubility, *Organic solvents, Mixtures, Water, Isotope separation.

Sabau, M. and Zamfirescu, I.
DETERMINATION OF THE NEUTRON FLUX ENERGY DISTRIBUTION IN ACTIVATION AND TRANSMISSION EXPERIMENTS. [1962] 6p. 7 refs.
Order from OTS or SLA $1.10 AEC-tr-4963

Trans. of Acad[emia] Rep[ublicii] Populare Romine. Inst[itutul de] Fiz[ica]. Studii [si] Cercetari [de] Fiz[ica] (Rumania) 1960, v. 11, no. 2, p. 351-356. Another trans. is available from ATS $9.40 as ATS-74N55RU [1962] 5p.

DESCRIPTORS: *Neutron flux, Energy, Distribution, *Neutron detectors, Foils, Nuclear reactors.

The present paper attempts to determine the neutron flux inside a reactor or a thermal column, by using activation detectors in the form of small, thin foils, which produce a negligible local perturbation of the flux which, in turn, can be measured.

Samoilov, B. N., Sklyarevskii, V. V. and others.
DETERMINATION OF THE SIGN OF A LOCAL MAGNETIC FIELD IN THE NUCLEI OF GOLD DISSOLVED IN IRON AND NICKEL, tr. by A. Monks. 1961, 8p. 9 refs.
Order from OTS or SLA $1.10 AEC-tr-5476

Trans. of unidentified mono., Academy of Sciences USSR, Moscow, 1961.

DESCRIPTORS: *Magnetic fields, Nuclei, *Gold, *Iron, *Nickel, Radiation chemistry, Radioactive decay, Alloys, Solutions, Anisotropy, Polarization, Magnetic moments.

Measurements were made of the β-irradiation asymmetry of Au^{198} nuclei polarized in weak gold solutions in iron and nickel; the objective was to determine the magnitude and sign of the local magnetic field in the nuclei of dissolved gold. By studying the γ-irradiation anisotropy of Au^{198} nuclei oriented in a Fe-Au alloy only the absolute local field, could be determined, since the angular distribution of γ-irradiation of the oriented nuclei depends only on the even degrees of the product. (Author)

Sena, L. A.
METHODEN DER MESSUNG DER EFFEKTIVEN QUERSCHNITTE DER WECHSELWIRKUNG ZWISCHEN IONEN UND ATOMEN IM GAS (Methods of Measuring the Effective Cross Sections of the Interaction between Ions and Atoms in Gases). 14p.
Order from TIB $2.35

Trans. in German of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1939 [v. 9] no. 9, p. 1061-1068.

DESCRIPTORS: Measurement, *Ions, *Atoms, Gases, *Proton cross sections.

Shashkina, N. N.
RADIOMETRIC METHOD OF ASSAYING SOLUTIONS FOR URANIUM IN THE PRESENCE OF IONIUM (Radiometricheskii Metod Opredeleniya Kontsentratsii Urana v Rastvorakh, Soderzhashchikh Ionii) tr. by Ivan Mittin. 1962 [5]p. 2 refs.
Order from OTS or SLA $1.10 62-32146

Trans. of #Atomnaya Energiya (USSR) 1961, v. 10, no. 4, p. 392-393.

DESCRIPTORS: *Uranium, Solution, Determination, *Thorium, *Radiochemistry, Radioactivity, Scintillation counters.

Shevchenko, V. B., Solovkine, A. S. and others.
INFLUENCE DES ALCOOLS SATURES PRIMAIRES ET DES ETHERS SIMPLES SUR L'EXTRACTION DE U(VI), Pu(IV), Ce(III) ET Nb(V) PAR LE TBP A PARTIR D'UNE SOLUTION NITRIQUE [Effect of Saturated Monatomic Alcohols and Ethers on the Extraction of U^{VI}, Pu^{IV}, Zr^{IV}, Ce^{III}, and Nb^{V} with Tri-n-butl Phosphate From Nitric Acid Solutions] tr. by Garber. 24 Mar 62 [13]p. 3 refs. CEA Trans. no. R 1486 (text in French).
Order from OTS or SLA $1.60 62-33753

Trans. in French of Radiokhimiya (USSR) 1961, v. 3, no. 4, p. 503-506.

DESCRIPTORS: *Radiochemistry, *Uranium, *Plutonium, *Cerium, *Niobium, *Nitric acid, Separation, Alcohols, Ethers, Phosphates, Butyl radicals.
On a déterminé la relation qui existe entre les coefficients de partage des nitrates inorganiques formant avec le TBP des complexes anhydres et la polarisabilité moléculaire du diluant pur d'une série homologue donnée. On a mis en évidence le décroissement des coefficients de partage de $UO_2(NO_3)_2$, $Pu(NO_3)_4$, $Zr(NO_3)_4$ et $Ce(NO_3)_3$ avec l'accroissement de la polarisabilité moléculaire du diluant pur. On a noté que la nature des écarts de la loi idéale des coefficients de partage de $UO_2(NO_3)_2$ et de $Pu(NO_3)_4$ dans le système TBP-diluant est conditionnée par la valeur numérique de la polarisabilité moléculaire du diluant pur. (Author)

Zemlyanov, M. G. and Chernoplekov, N. A.
APPARATUS FOR STUDIES ON CONDENSED SYSTEMS BY MEANS OF INELASTIC SCATTERING OF COLD NEUTRONS (Ustanovka dlya Issledovanniya Dinamiki Kondensirovannykh Sistem po Neuprugomu Rasseyanniyu Kholodnykh Neitronov). [1962] 8p. 4 refs.
Order from OTS or SLA $1.10 AEC-tr-5232

Trans. of mono. [International Atomic Energy Agency] Symposium on Pile Neutron Research in Physics, Vienna, 17-21 Oct 60. Proceedings, 1962, p. 409-414 (STI/PUB/36).

DESCRIPTORS: *Neutrons, Neutron beams, Excitation, *Inelastic scattering, Test equipment, Nuclear radiation spectrometers, Scintillation counters, Measurement, Nuclear reactors.

A brief description is given of an experimental facility attached to the IRT-1000 reactor for studying the dynamics of condensed matter using inelastic scattering of cold neutrons. The results of preliminary experiments are given. (Author)

Instruments and Installations

SOVIET NUCLEAR INSTRUMENTATION AND CONTROL FOR PROPULSION. Rept. no. 11 on Soviet and Soviet-bloc Developments in Nuclear Instrumentation and Control for Propulsion, AID Work Assignment no. 31. 8 Mar 63 [18]p. 13 refs. AID rept. P-63-31.
Order from OTS or SLA $1.60 63-15943

DESCRIPTORS: *Nuclear propulsion, Instrumentation, *Radiation measurement systems, Radiation measurement system components, Detectors, Electronic equipment.

Contents:
Electronic equipment
Detectors
Miscellaneous related subjects.

Volkovitskaya, V. V.
MATERIAL ZUR HYGIENISCHEN CHARAKTERISIERUNG DER ARBEITSBEDINGUNGEN BEI DER ARBEIT AM SYNCHROZYKLOTRON 680 MEV (Material on Characterization of the Hygiene of Working Conditions During Work at the Synchrocyclotron 680 MEV). 6p.
Order from TIB $1.30

Trans. in German of Gigiena Truda i Professional'nye Zabolevaniya (USSR) 1961, v. 5, no. 4, p. 29-32. Another trans. is available in English from OTS $2.25 in 61-31528, JPRS-9706, 18 July 61, 95p.

DESCRIPTORS: *Synchrocyclotrons

SOVIET NUCLEAR RESEARCH REACTORS VVR-S (MOSCOW) AND VVR-S (TASHKENT): REVIEW OF SOVIET LITERATURE. Rept. no. 5 on Soviet Reactors, AID Work Assignment no. 31. 21 Jan 63 [16]p. 6 refs. AID rept. P-63-14.
Order from OTS or SLA $1.60 63-15915

DESCRIPTORS: Nuclear reactors, *Research reactors, Light water reactors, Construction, Reactor control, Control rods, Reactor safety systems.

Contents:
Foreward
The VVR-S reactors: background
I. The Moscow VVR-S reactor
II. The Tashkent VVR-S reactor.

Dolgov, V. V., Kozlov, V. Ya. and others.
SINGLE-PASS STEAM SUPERHEATING EXPERIMENTAL INSTALLATION OF THE FIRST ATOMIC POWER PLANT REACTOR (Pryamotochnaya Paroperegrevel'naya Eksperimental'naya Ustanovka Reaktora Pervoi Atomnoi Elektrostantsii). [1962] [20]p. 4 refs.
Order from OTS or SLA $1.60 AEC-tr-5361

Trans. of mono. [International Atomic Energy Agency] Symposium on Power Reactor Experiments, Vienna, 23-27 Oct 61. Proceedings, v. 2, p. 27-40 (STI/PUB/51).

DESCRIPTORS: Nuclear power plants, *Nuclear reactors, Reactor operations, *Steam power plants, Steam, Heat transfer, Design.

The report describes an experimental unit of the single-pass type for superheating steam in the reactor, and also presents the results of investigations conducted with this unit. (Author)

Tytgat, D.
STUDY FOR THE BR-1 REACTOR OF A PROTOTYPE OF A FUEL ELEMENT OF NATURAL URANIUM WITH NICKEL COATING AND ALUMINUM CLADDING. [1960] 6p. (figs. refs. omitted).
Order from SLA $1.10 60-18793

Trans. of C[entre d'Étude de l']E[nergie] N[ucléaire] Brussels (Belgium) no. R-1822, May 60, 21p.

DESCRIPTORS: *Research reactors, *Reactor fuel elements, *Reactor fuel cladding, Uranium, *Aluminum coatings, *Nickel coatings.

Zagrafov, V. G.
METHODE ZUR ABSCHÄTZUNG DER KRITISCHEN PARAMETER BELIEBIG GEFORMTER KÖRPER AUS SPALTBAREM MATERIAL (A Method of Evaluating Critical Parameters of Fissile Bodies with Arbitrary Shapes). 5p.
Order from TIB $1.20

Trans. in German of Atomnaya Energiya (USSR) 1960, v. 8, no. 1, p. 23.

DESCRIPTORS: *Reactor fuels

PERSONNEL SUPPLIES AND PERSONAL EQUIPMENT

Lehmann, Friedrich.
PENHOLDER, tr. by J. R.-P. 29 Oct 62, 2p. (figs. omitted).
Order from OTS or SLA $1.10 63-13011

Trans. of Swiss patent 11,546, cl. 46, 23 Jan 1896.

DESCRIPTORS: *Pens, Clamps, Office equipment and supplies.

A penholder that is intended especially for children is described, it compels the writer to make his fingers assume the prescribed correct position. This is achieved in that on the anterior portion of the holder where the latter is to be grasped, surfaces are arranged for the thumb, index and middle fingers, said surfaces hollowed out to correspond to the finger tips so that the writer will be forced to accustom himself to a normal finger position.

PHYSICS

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 135 (PHYSICS AND MATHEMATICS SERIES). 16 Apr 63 [12]p.
JPRS: 18729.
Order from OTS $0.50 63-21588

Consists of abstracts of articles from the scientific and technical journals of Poland.

DESCRIPTORS: *Abstracts, *Poland, *Physics, *Mathematics, *Astronomy, *Nucleonics, Intersellar matter, Comets, Stars, Solar corona, Gases, Spheres, Motion, Brightness, Galaxies, Well logging, Neutrons, Nuclear particles, Metals, Ions, Deuterium, Tritium, Labeled substances, Oils, Iron, Bremsstrahlung, Geologic age determination.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 138 (PHYSICS AND MATHEMATICS SERIES). 17 Apr 63 [46]p.
JPRS: 18754.
Order from OTS $1.25 63-21598

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia.

DESCRIPTORS: *Abstracts, Czechoslovakia, *Physics, *Mathematics, Magneto-hydrodynamics, Thermionic converters, Electron optics, Electron beams, Electron guns, Electric fields, Charged particles, Electron microscopes, Ions, Metals, Erosion, Plasma physics, Electric discharges, Torches, Quartz, Graphite, Electrochemistry, Standing wave ratios, Resonance, Field emission, Dielectrics, Valves, Cathodes, Secondary emission, Photomultipliers, Phosphors, Adsorption, Vacuum pumps, Magnetic fields, Mass spectroscopy, Spectrum analyzers, Atoms, Radioactive isotopes, Masers, Generators, Magnetrons, Electrical impedance, Waveguides, Electrons, Functions, Groups (Mathematics), Geometric forms, Potential theory, Magnetism, Relaxation time.

Basyrov, Z. B. and Pankratov, A. V.
THE SENSITIVITY OF OZONE-OXYGEN SOLUTIONS TO A PRESSURE PULSE. 26 Dec 62, 8p. 12 refs.
FTD-TT-62-1460.
Order from OTS or SLA $1.10 63-15518

Unedited rough draft trans. of Khimicheskaya Promyshlennost' (USSR) 1962, no. 3, p. [174-175].

DESCRIPTORS: *Ozone, *Oxygen, Solutions, *Liquefied gases, *Explosions, Pressure, Sensitivity, Shock tubes, Crusher gages.

Mcleshko, L. O.
THE CRYSTALLIZATION OF A SUPERCOOLED LIQUID IN AN ULTRASONIC FIELD. Aug 61 [6]p. 6 refs.
Order from OTS or SLA $1.10 AEC-tr-4635

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 4, p. 123-125.

DESCRIPTORS: Liquid, *Napthalenes, Crystallization, *Crystal growth, Nucleation, *Ultrasonic radiation, Radiation effects, Phase studies.

The effect of an ultrasonic field on the crystallization of supercolled bethol is investigated. It is established that under the influence of ultrasonic phenomena in a supercooled melt, mass generation of nuclei of the new phase occurs near the faces of the growing crystals, which is explained by the dispersing action of the field. It is found that under the influence of ultrasonic waves the temperature curve of the number of nuclei of crystallization shifts towards the lower timperatures. (Author)

Acoustics

Aldag, Wilhelm.
SOUND-ABSORBING ROOM-SURFACE COVERING OF VIBRATORY PLATES. [1962] 2p. 3 refs.
Order from OTS or SLA $1.10 62-20414

Trans. of German preliminary patent 1,130,992. A 26133 V/37f, cl. 37f 1/02, Internat. cl. E 04b, appl. 3 Dec 56, granted 7 June 62.

DESCRIPTORS: *Sound, Absorption, Surfaces, Plating, *Acoustic insulation, Design, Vibration, Sheets.

The invention involves a sound-absorbing room-surface covering of vibratory plates, especially light plates, fastened by means of highly elastic strips, whereby edge-damping is effected in the hollow space behind the plates, characterized by the fact that the fastening strips consist of highly elastic foam material with open pores, e.g. of polyurethane foam material, and thus themselves effect edge-damping of the hollow space. The vibratory plates are hung point-wise or line-wise by means of adhesives or corresponding shaping. (Author)

Kubanskii, P. N.
EFFECT OF ACOUSTICAL VIBRATIONS OF FINITE AMPLITUDE ON THE BOUNDARY LAYER. [1962] [11]p. 4 refs.
Order from OTS or SLA $1.60 62-18287

Trans. of Zhurnal Tekhnicheskoi Fiziki (USSR) 1952, v. 22, no. 4, p. 593-601.

DESCRIPTORS: *Acoustics, *Vibration, *Boundary layer, Wind tunnels, Calorimeters, Fluid flow, Optical scanning, Boundary layer control, Boundary layer transition, Standing wave ratios.

Acoustical standing waves of finite amplitude can produce currents near the wall of a solid body, even when the body is located in a stream. A considerable intensity of acoustical vibration is necessary in order to produce acoustical flow near the walls of a solid body in a stream. We can assume, as a preliminary conclusion, that the average value of the vibrational velocity in the acoustical field must not be less than the velocity of the stream. The acoustical streams produced near the walls of solid bodies exert an influence on the boundary layer which surrounds the body. There is a possibility of using acoustical vibrations to control phenomena which occur in the boundary layer. Such phenomena could be directed toward the desired side of a physical body, depending upon the condition of the boundary layer. (Author)

Kubanskii, P. N.
FLOW NEAR A HEATED HARD BODY IN A STANDING ACOUSTIC WAVE. [1962] [9]p. 9 refs.
Order from OTS or SLA $1.10 62-18288

Trans. of Zhurnal Tekhnicheskoi Fiziki (USSR) 1952, v. 22 [no. 4] p. 585-592.

DESCRIPTORS: *Gas flow, Solids, *Acoustics, *Vibration, Heat transfer, Viscosity, Equations, Calorimeters, Standing wave ratios.

Novikov, S. S. and Ryazantsev, Yu. S.
THE ACOUSTIC CONDUCTIVITY OF A RIGID BURNING SURFACE (Akusticheskaya Provodimost' Zhestkoi Goryashchei Poverkhnosti). [1962] 11p. 17 refs.
Order from OTS or SLA $1.60 62-20004

Trans. of [Zhurnal] Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1961, no. 6, p. 73-77.

DESCRIPTORS: *Acoustic properties, Acoustics, *Conductivity, *Combustion, Surfaces, Perturbation theory.

Electricity and Magnetism

Arabadzhi, V. I. and Rudik, K. I.
KLYDONOGRAMS OF INTERACTING ELECTRODES. 28 Dec 62, 8p. 1 ref. FTD-TT-62-1540.
Order from OTS or SLA $1.10 63-15549

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1962, no. 1, p. 103-104.

DESCRIPTORS: *Electrodes, *Electric discharges, *Photography, Low pressure research, Photographic emulsions, Powders, Sulfur, Iron.

Dorfman, Ya. G.
MAGNETIC PROPERTIES AND THE STRUCTURE OF MATTER: FOREWORD, INTRODUCTION, AND TABLE OF CONTENTS. [1961] 8p. MDF D 118.
Order from OTS or SLA $1.10 62-15875

Partial trans. of mono. [Magnitnye Svoistva i Stroenie Veshchestva] Moscow, 1955, 376p.
Trans. of mono. is available from OTS $4.50 as AEC-tr-4507, June 61, 364p.

DESCRIPTORS: *Magnetic materials, Magnetism, *Paramagnetism, *Ferromagnetism, Antiferromagnetism, *Elementary particles.

Granovskii, V. L.
ZUR THEORIE DER SPANNUNGSVERTEILUNG IM UNTERTEILTEN STROMRICHTERGEFASS (On the Theory of Voltage Distribution in a Subdivided Converter-container). 8p.
Order from TIB $1.55

Trans. in German of Zhurnal Tekhnicheskoi Fiziki (USSR) 1952, v. 22, no. 3, p. 408-413.

DESCRIPTORS: *Voltage, *Distributors, *Electromechanical converters, Containers.

Gurvich, E. I. and Kondorskii, E.
ON THE RELATION OF THE MAGNETIC CHARACTERISTICS OF MAGNETICALLY SOFT ALLOYS TO THE LAMINA THICKNESS. [1961] 5p. 5 refs. MDF G-133.
Order from OTS or SLA $1.10 62-15854

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 104, no. 4, p. 530-532.

DESCRIPTORS: *Magnetic alloys, Annealing, Alloys, Magnetic properties, Permeability (Magnetic), Hysteresis, Microstructure, Impurities.

Kuchinskii, G. S. and Tapupere, O. O.
AUFZEICHNUNG DER IONISATIONSEIGENSCHAFTEN DER ISOLATION (Recording the Ionization Characteristics of Insulation). 14p.
Order from TIB $2.35

Trans. in German of Elektrichestvo (USSR) 1960, no. 11, p. 42-48.

DESCRIPTORS: *Ionization, Physical properties, Electric insulation

Remizov, A. N.
DEPENDENCE OF THE MAGNETIC VISCOSITY ON SPECIMEN DIMENSIONS. [1961] 4p. 6 refs.
MDF R-102.
Order from OTS $0.50 62-11639

Trans. of [Akademiya] N[auk] SSSR. Doklady, 1955, v. 104, no. 3, p. 389-390.

DESCRIPTORS: *Iron, Magnetic properties, Viscosity.

In this work, results are given of the measurement of the magnetic viscosity of the Young type, made in cylindrical specimens of armco-iron of various lengths and diameters.

Shepsenvol, M. A.
METHODEN DER MODELLNACHBILDUNG AN DER ELEKTROLYTISCHEN WANNE MIT AUTOMATISIERTER BERECHNUNG DER RAUMLADUNGSVERTEILUNG (Method of Modeling on an Electrolytic Bath with Automated Calculation of the Space Charge Distribution) 15p.
Order from TIB $2.45

Trans. in German of #Zhurnal Tekhnicheskoi Fiziki (USSR) 1961 [v. 31] no. 3, p. 286-296.

DESCRIPTORS: *Electrolytes, *Space charges, Model tests.

Shur, Ya. S. and Abel's, V. R.
INVESTIGATION OF THE MAGNETIC STRUCTURE OF IRON SILICIDE CRYSTALS BY THE POWDER DIAGRAM METHOD. [1961] 3p. 2 refs. MDF s 109.
Order from OTS or SLA $1.10 62-23079

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 104, no. 2, p. 209-210.

DESCRIPTORS: *Ferrites, *Iron compounds, *Silicides Magnetic properties, *Ferromagnetism, Powders.

Spivak, G. V., Prilezhaeva, I. N., and Azovtsev, V. K.
MAGNETIC CONTRAST IN AN ELECTRON MIRROR AND THE OBSERVATION OF FERROMAGNETIC DOMAINS. [1961] 6p. (figs. omitted) 2 refs.
MDF S-118.
Order from OTS or SLA $1.10 62-23032

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 105, no. 5, p. 965-967.

DESCRIPTORS: *Electron optics, Mirrors, Amplifiers, Copper electrodes, Single crystals, *Cobalt, Microstructure, Magnetic properties, *Ferromagnetism, *Domains (Crystallography).

The images of cobalt domains which were obtained in the electron mirror possess very high contrast, which indicates considerable sensitivity of the electron mirror to local magnetic fields at the surface of a reflecting electrode. The electron mirror permits the local magnetic field of the domains to be studied not only near the surface itself (in the center of the field of view) but at distances somewhat removed from the specimen (on the peripheral part of the field of view), which cannot be done by the powder method. (Author)

Timofeeva [G. G.] and Granovskii [V. L.].
DEFORMIERUNG DER BOGENSÄULE IM VERDUENNTEN GAS BEI GROSSER STROMSTÄRKE (Deformation of the Arc Column in Rarified Gases at Heavy Current). 19p.
Order from TIB $2.95

Trans. in German of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1956, v. 30, no. 3, p. 477-487.

DESCRIPTORS: Deformation, Electric current, *Electric arcs

Tolomasov, V. A. and Apaev, B. A.
EXAMINATION OF MEASURING SCHEMES OF BALLISTIC MAGNETOMETER AND ANISOMETER. [1962] [14]p. 9 refs.
Order from OTS or SLA $1.60 62-18274

Trans. of Zavodskaya Laboratoriya (USSR) 1957, v. 23, no. 7, p. 821-826.

DESCRIPTORS: Measurement, Ballistics, *Magnetometers, *Magnetism, Coils, Galvanometers, Equations, Ferromagnetism.

Vicena, F.
ON THE INFLUENCE OF DISLOCATIONS ON THE COERCIVE FORCE OF FERROMAGNETICS [O Vliyanii Dislokatsii na Koertsitnivnuinu Silu Ferromagnetikov]. [1961] 30p. 14 refs. MDF V 105.
Order from OTS or SLA $2.60 62-23010

Trans. of [Chekhoslovatskii Fizicheskii Zhurnal] 1955, v. 5, no. 4, p. 480-501.

DESCRIPTORS: Ferrites, Nickel, Iron, *Ferromagnetism, *Crystal lattice defects, *Domains (Crystallography), Magnetic fields, Statistical distributions.

The influence of the elastic dislocation field is studied on the motion of the Bloch walls between domains. The variation is studied of the energy of the system (Bloch wall + dislocation) when the Bloch walls are displaced in the vicinity of the dislocation, specified both by the mechanism of the surface stress of the Bloch wall and by the mechanism of the internal demagnetizing field. Hence, it is seen that the effect of the surface stress of the Bloch wall is more significant at a dislocation. The value of the energy variation calculated shows that the dislocations, along with other well-known factors, are the next factors which must be taken into account when interpreting the characteristic magnetization curves in weak fields. The coercive force of a ferromagnetic with a statistical distribution of dislocations is calculated. The numerical values (obtained for undeformed and very deformed nickel and iron) are in good agreement with experiment. Relations are derived for the coercive force depending on the parameters of the mosaic structure. (Author)

Wartenberg, Hans von.
ELECTRICAL RESISTANCE MEASUREMENT OF POWDERS. [1962] 3p. (fig. omitted) 5 refs.
Order from SLA $1.10 63-10004

Trans. of Zeitschrift für Angewandte Physik (West Germany) 1953, v. 5, p. 291-292.

DESCRIPTORS: *Resistance (Electrical), Measurement, *Powders, Conductivity, Electrolytes, Solutions, Silicon.

The specific resistance rho of a loose powder can be measured by introducing it into systematically varied electrolyte solutions until its conductivity is not changed by the powder mixture. Then the rho of the powder is equal to that of the electrolyte (suspension method). (Author)

Electronics

Draganescu, M.
THEORY OF TRANSISTORS WITH HIGH INJECTION LEVELS: DEPENDENCE OF THE VELOCITY OF SURFACE RECOMBINATION ON THE INJECTION LEVEL AT THE BASE OF THE TRANSISTOR. [1962] 7p. 7 refs.
Order from SLA $1.10 62-18769

Trans. of Academia Republicii Populare Romine. Institutul de Fizica. Studii si Cercetari de Fizica, 1961, v. 12, no. 4, p. 815-820.

DESCRIPTORS: *Transistors, Theory, Injection, Surface properties, Velocity.

Gonorovskii, I. S.
ON PHASE FLUCTUATIONS IN A TUBE OSCILLATOR [O Fluktuatsii Fazy v Lampovom Generatore]. [1961] 7p. 6 refs. MDF G-124.
Order from OTS or SLA $1.10 62-15852

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 101, no. 4, p. 657-660.

DESCRIPTORS: *Oscillators, Electron tubes, Oscillator circuits, Feedback, Radiofrequency spectroscopy.

Grekov, L. I. and Favorskii, O. N.
EINFLUSS DER BERUECKSICHTIGUNG DER VISKOSITÄT AUF DIE PARAMETER EINES MAGNETOGASDYNAMISCHEN GENERATORS (The Influence of Considering the Viscosity on the Parameters of a Magneto-Gasdynamic Generator). 14p.
Order from TIB $2.35

Trans. in German of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika 1961, no. 4, p. 46-54.
An unedited rough draft trans. is available in English from OTS or SLA $1.60 as 62-15196, FTD-TT-61-137, 3 Nov 61 [18]p.

DESCRIPTORS: *Viscosity, Magnetism, Gases, *Dynamics, *Generators

Kucheryaev, Yu. A. and Panov, D. A.
ON THE REASONS FOR ANOMALOUS LOSS OF ELECTRONS OUT OF THE OGRA PLASMA, tr. by J. Lewin. 1 Oct 62 [21]p. 3 refs.
Order from OTS or SLA AEC-tr-5474

Trans. of unidentified mono., Moscow, 1962.

DESCRIPTORS: *Plasma physics, Plasma oscillations, Frequency, *Electron beams, Electrons, Energy, Spectroscopy, Magnetic fields.

It has been discovered that the plasma in OGRA acquired an anomalously large positive charge. This potential difference between the plasma and the walls reaches several tens of kilovolts. Therefore, experiments have been run to determine the acquisition of longitudinal Z-wise energy by electrons. The experiments have shown that electrons having an initial energy of about 1 kilovolt acquire an energy spectrum in one pass through the plasma that reaches several hundred electron volts; that is, the spread of energy reaches several hundred electron volts. An analysis of the oscillations of the electron beam current has made possible the conclusion that the energy of the electrons is affected by oscillating longitudinal electric fields that arise because of the cyclotron instabilities of the plasma. (Author)

Kulikovskii, A. A.
COMPARISON OF THE THEORIES OF TUBE AND SEMICONDUCTOR AMPLIFIERS AND THEIR POSSIBLE GENERALIZATION [Sravnenie Teorii Lampovykh I Poluprovodnikovykh Usilitelei i Vozmozhnosti Ikh Obobshcheniya]. [1961] 13p. 3 refs. MDF K-157.
Order from OTS or SLA $1.60 62-15923

Trans. of Radiotekhnika (USSR) 1955, v. 10, no. 11, p. 3-11.

DESCRIPTORS: *Amplifiers, *Electron tubes, *Semiconductor devices, Triodes, Operation, Theory, Electronic circuits.

Moizhes, B. Ya.
ELECTRODYNAMIC AVERAGED BOUNDARY CONDITIONS FOR A METALLIC GRID [Elektrodinamicheskie Usredennye Granichnye Usloviya dlya Metallicheskikh Setok]. [1961] 14p. 5 refs. MDF M/108.
Order from OTS or SLA $1.60 62-23091

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1955, v. 25, no. 1, p. 158-166.

DESCRIPTORS: *Triodes, *Electron tube parts, *Electrodes, Electric fields, *Boundary layer, Dynamics.

Moizhes, B. Ya.
ELECTROSTATIC AVERAGED BOUNDARY CONDITIONS FOR METALLIC GRIDS [Elektrostaticheskie Usrednennye Granichnye Usloviya dlya Metallicheskikh Setok]. [1961] 14p. 7 refs. MDF M/109.
Order from OTS or SLA $1.60 62-23090

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1955, v. 25, no. 1, p. 167-176.

DESCRIPTORS: *Triodes, *Electron tube parts, *Electrodes, Electric fields, *Boundary layer, *Electrostatics.

Ostroumov, G. A.
HYDRODYNAMICS OF ELECTRIC DISCHARGES [K Voprosu o Gidrodinamike Elektricheskikh Razriadov]. [1962] 10p. 13 refs.
Order from OTS or SLA $1.10 63-10658

Trans. of [Zhurnal Tekhnicheskoi Fiziki] (USSR) 1954, v. 24, no. 10, p. 1915-1919.
Another trans. is available from SLA as RT-4486, 5p.

DESCRIPTORS: Hydrodynamics, *Electric discharges, Dielectrics, Electrical conductance, Fluid dynamic properties, Convection, *Plasma physics.

Ryvkin, S. M.
ON THE QUESTION OF THE OPERATING MECHANISM OF GERMANIUM PHOTO-DIODES. [1961] 12p. 10 refs. MDF R 110.
Order from OTS or SLA $1.60 62-19929

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1955, v. 25, no. 1, p. 21-28.

DESCRIPTORS: *Semiconductor devices, *Photoconductivity, Photoelectric cells (Semiconductor), *Diodes (Semiconductor), Operation, Photoelectric materials, *Germanium.

The fundamental reasoning is presented on the operating principles of the n-p diode as a photodiode and a derivation is given of the fundamental relation between the photo e.m.f., the photo currents, short circuit and saturation, as the photodiode operates in the region of the valve photocell and also given is a derivation of the general photodiode equation suitable for any region. Results are given of the quantitative experimental verification of the relation for the valve photo e.m.f. region. Certain discussions and experimental results, referring to the photodiode efficiency when used in the valve photocell region, are presented. (Author)

Simin, E. P. and Yantovskii, E. N.
STRÖMEN EINES ELEKTRISCH LEITENDEN GASES IN EINEM KANAL MIT LAUFENDEM MAGNETFELD (Flowing of a Electrically Conductive Gas in a Channel with a Travelling Magnetic Field). 7p.
Order from TIB $1.45

Trans. in German of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1961, no. 4, p. 170-172.
An unedited rough draft trans. is available in English from OTS or SLA $1.10 as 62-15398, FTD-TT-61-113, 14 Dec 61 [10]p.

DESCRIPTORS: *Gas flow, *Electrical conductance, *Magnetic field

Yantovskii, E. I.
GLEICHUNGEN EINES MAGNETOHYDRODYNAMISCHEN WECHSELSTROMGENERATORS MIT ROTIER ENDEM MAGNETFELD (Equations of a Magnetohydrodynamic Alternating Current Generator with Rotating Magnetic Field). 17p.
Order from TIB $2.70

Trans. in German of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika 1961, no. 6, p. 142-51.
Other translations are available in English from OTS or SLA $2.60 as 62-24936, FTD-TT-62-90 and $1.60 as 62-32803, CE Trans-2542 [1962] [14]p.

DESCRIPTORS: Equations, *Magnetohydrodynamics, Alternating current, *Generators, Magnetic field

Molecular Physics and Spectroscopy

Kolesnikov, V. N. and Leskov, L. V.
OPTICAL TRANSITION PROBABILITIES FOR ATOMS AND DIATOMIC MOLECULES [Veroyatnosti Opticheskikh Perekhodov dlya Atomov i Dvukhatomnykh Molekul]. [1962] 51p. 370 refs.
Order from OTS or SLA $5.60 63-10744

Trans. of Usp[ekhi] Fiz[icheskikh] Nauk (USSR) 1958, v. 65, no. 1, p. 3-38.

DESCRIPTORS: *Atoms, *Molecules, *Electron transitions, Probability, Optics, Measure theory, Harmonic analysis, Perturbation theory, *Bibliographies.

Kotsarov, G. E. and Korolev, G. A.
IONISATIONS-α-SPEKTROMETER HOHER AUFLOSUNG (Ionization-α-Spectrometers of High Decomposition). 36p.
Order from TIB $5.05

Trans. in German of #Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1961, v. 25, [no. 2] p. 237-256.

DESCRIPTORS: *Ionization, *Alpha spectra.

Kozyrev, B. M.
ELECTRON PARAMAGNETIC RESONANCE IN LIQUID SALT [Elektronnyi Paramagnitnyi Rezonans v Zhidkikh Rastvorakh Solei]. [1961] 7p. 10 refs. MDF K 142.
Order from OTS or SLA $1.10 62-23100

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 103, no. 1, p. 53-56.

DESCRIPTORS: *Paramagnetic resonance, Electrons, *Salts, Ions, Group VIII elements, Manganese, Copper, Vanadates, Chromium, Gadolinium, Absorption spectrum.

Electron paramagnetic resonance was studied in liquid salt solutions of ions of the iron group and the gadolinium ion in a number of oscillating field frequencies from $\sim 10^{10}$-10^{7} cps within a broad con-

centration range. The greater part of the measurements were carried out in aqueous solutions at room temperature. Other solvents were used in separate cases (ethyl alcohol, glycerine, acetone); the influence of the solution temperature on the effect (resonance) was explained by several examples. Considerable paramagnetic resonance absorption was observed in solutions of the Mn^{++}, Cu^{++} VO^{++}, Cr^{+++} and Gd^{+++} salts. (Author)

Rakhovskii, V. I., Lyubimov, A. P. and others.
A DEVICE FOR MEASURING ION CURRENTS IN MASS-SPECTROMETER CIRCUITS. 17 Jan 63, 5p. FTD-TT-62-1529.
Order from OTS or SLA $1.10 63-15550

Unedited rough draft trans. of Soviet patent 144559 (685696/26) 15 Nov 60.

DESCRIPTORS: *Mass spectrometers, *Ionic current, Measurement, Photomultipliers, Geiger counters.

A device is described for measuring ion currents in mass-spectrometer circuits, differing in that, for the purpose of increasing the accuracy of the measurement and simplifying the design of the device, one photomultiplier dynode is used as the converter of ion current into electron current, and a Geiger counter is used for soft β-radiations. (Author)

Sevchenko, N. A. and Florinskaya, V. A.
THE REFLECTION AND TRANSMISSION SPECTRA OF VARIOUS MODIFICATIONS OF SILICON DIOXIDE IN THE WAVELENGTH REGION 7-24μ. [1962] 8p. 16 refs.
Order from OTS or SLA $1.10 63-10666

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1956, v. 109 [no. 6] p. 1115-1118.

DESCRIPTORS: *Silicon compounds, *Dioxides, *Quartz, Reflection, Wave transmission, *Crystal structure, *Spectra (Infrared), *Band spectrum.

Turov, E. A. and Vonsovskii, S. V.
ON THE WIDTH OF FERROMAGNETIC RESONANCE ABSORPTION LINES [O Shirine Linii Ferromagnitnogo Rezonansnogo Pogloshcheniya]. [1961] 4p. 8 refs. MDF T 122.
Order from OTS or SLA $1.10 62-15907

Trans. of Zh[urnal] Eksp[erimental'noi] i Teor-[eticheskoi] Fiz[iki] (USSR) 1953, v. 24, no. 4, p. 501-503.

DESCRIPTORS: *Ferromagnetism, *Resonance absorption, *Absorption spectrum, Line spectrum, Lattices, Electrons, Spin.

Vyshinskii, N. N. and Rudnevskii, N. K.
THE SPECTRA AND STRUCTURE OF METALLO-ORGANIC COMPOUNDS. PT. I: VIBRATIONAL SPECTRA OF TETRAETHYLLEAD AND HEXA-ETHYLDIPLUMBANE. [1962] 11p. 19 refs.
Order from OTS or SLA $2.60 AEC-tr-5300

Trans. of Trudy po Khimicheskoi Tekhnologii (USSR) 1960, no. 3, p. 538-544.

DESCRIPTORS: *Metalorganic compounds, Spectra (Infrared), *Absorption spectrum, *Ethyl radicals, *Lead compounds, *Raman spectroscopy.

Optics

Kard, P. G.
THEORY OF OPTICAL PROPERTIES OF MULTILAYER COATINGS. [1962] 13p. 7 refs.
Order from OTS or SLA $1.60 62-18618

Trans. of Tartu U. [Uchenye Zapiski] (Estonian SSR) 1958, v. 62, p. 169-179.

DESCRIPTORS: *Coatings, Optical properties, Theory, *Dielectric films, Light transmission, Reflection, Refraction.

Rvachev, A. L.
INFRAROTLUMINESZENZ UND PHOTOLEITFAHIG-KEIT VON KUPFEROXYDUL (Infrared Luminescence and Photo-Conductivity of Cuprous Oxide).
Order from TIB $1.80

Trans. in German of Politekhnichnyi Instytut, Lvov. Nauchnye Zapiski: Seriya Fizicheskaya, 1958, v. 57, no. 2, p. 138-143.

DESCRIPTORS: *Infrared spectroscopy, *Photoconductivity, *Copper compounds, Luminescence

Solid State Physics

Akhundov, G. A., Abdullaev, G. B., and Guseinov, G. D.
EINIGE EIGENSCHAFTEN DER THALLIUMSELENID-EINKRISTALLE (Certain Properties of Thallium Selenide Monocrystals).
Order from TIB $1.55

Trans. in German of Fizika Tverdogo Tela (USSR) 1960, v. 2, no. 7, p. 1518-1521.

DESCRIPTORS: *Thallium compounds, *Selenides, *Crystals

Amelina, E. A., Segalova, E. E., and Rebinder, P. A.
UEBER DIE UNTERSCHIEDLICHKEIT DER HYDRATATIONSDAUER UND DAS ERREICHEN DER MAXIMALEN FESTIGKEIT DER KRISTALLSTRUKTUR IN GIPSHALBHYDRATSUSPENSIONEN (On Differences in the Time in which Hydration is Completed and the Maximum Strength of the Crystal Structure Attained in Hemihydrated Calcium Sulphate Sustensions).
Order from TIB $1.30

Trans. in German of Akademiya Nauk SSSR. Doklady, 1960, v. 131, no. 5, p. 1123-1125.

DESCRIPTORS: *Hydrates, *Crystal structure, *Calcium compounds, *Sulfates, Colloids

Andrievskii, A. I. and Nabitovich, I. D.
UEBER DIE KRISTALLISATION UND DIE STRUKTUR VON SELEN IN DUENNEN SCHICHTEN (On the Crystallization and Structure of Selenium in Thin Layers).
Order from TIB $3.35

Trans. in German of Politekhnichnyi Instytut, Lvov. Nauchnye Zapiski: Seriya Fizicheskaya (USSR) 1958, v. 57, no. 2, p. 82-92.

DESCRIPTORS: *Crystallization, Structures, *Selenium, *Thin films

Ansel'm, A. I.
THEORIE DES PHOTOMAGNETISCHEN EFFEKTS IN HALBLEITERN BEI GROSSEN MAGNETFELDERN (The Theory of the Photomagnetic Effect in Semiconductors in Magnetic Fields) 6p.
Order from TIB $1.30

Trans. in German of Zhurnal Tekhnicheskoi Fiziki (USSR) 1954, v. 24, no. 11, p. 2064-2069.

DESCRIPTORS: *Theory, *Magnetic effects, *Semiconductors, Magnetic fields, Light.

Baranskii, P. I.
EINE NICHTKALORIMETRISCHE METHODE ZUR MESSUNG DER RELATIVEN WERTE DES PELTIER-KOEFFIZIENTEN AN DEN GRENZEN METALL-METALL UND METALL-HALBLEITER (A Noncalorimetric Method to Measure the Relative Values of the Peltier-Coefficient on the Boundaries Metal-Metal and Metal-Semiconductor).
Order from TIB $1.55

Trans. in German of Ukrayins'kyi Fizychnyi Zhurnal (USSR) 1959, v. 4 [no. 4] p. 472-476.

DESCRIPTORS: *Calorimeters, Measurement, *Metals, *Semiconductors, Thermoelectricity.

Bonch-Bruevich, V. L.
ZUR THEORIE DER STÖRSTELLENZUSTÄNDE IN HALBLEITERN (On the Theory of Impurity States in Semiconductors).
Order from TIB $1.80

Trans. in German of mono. Fizika Tverdogo Tela: [Sbornik Statei (Solid State Physics: Collection of Articles) v. 1, Moscow] 1959, p. 177-181.

DESCRIPTORS: Impurities, *Semiconductors, Theory

Borodich, V. D., Golub, A. P. and others.
CRITICAL CURRENTS OF Nb-Zr ALLOYS IN AN EXTERNAL MAGNETIC FIELD. 1962, 13p. 6 refs.
Order from OTS or SLA $1.60 AEC-tr-5473

Trans. of unidentified mono., Academy of Sciences USSR, Moscow, 1962.

DESCRIPTORS: *Superconductivity, Superconductors, Electrical currents, *Magnetic fields, *Niobium alloys, *Zirconium alloys, Cold working, Sheets, Wire, Deformation, Heat treatment.

The critical currents of Nb-Zr alloy samples of different compositions were measured in a transverse magnetic field having a voltage of 23.5 ke. Significant current anisotropy for cold-rolled sheets was detected. The effect of deformation and annealing after rolling on the superconducting properties of the alloys was studied. (Author)

Buckel, W. and Hilsch, R.
THE INFLUENCE OF LOW-TEMPERATURE CONDENSATION ON THE ELECTRICAL RESISTANCES AND SUPERCONDUCTIVITY OF VARIOUS METALS. [1962] 18p. 32 refs.
Order from SLA $1.60 63-10373

Trans. of Z[eitschrift] für Physik (West Germany) 1954, v. 138, p. 109-120.
Another trans. is available from SLA $2.60 as 62-18837 [1962] 22p.

DESCRIPTORS: Metals, *Resistance (Electrical), *Superconductivity, Condensation, *Low temperature research, Physical properties.

Datsenko, L. I.
X-RAY METHOD FOR OBSERVING AND DETERMINING LOW DISLOCATION DENSITIES IN GERMANIUM. [1962] 5p.
Order from OTS or SLA $1.10 63-13629

Summary trans. of #Fizika Tverdogo Tela (USSR) 1962, v. 4, no. 2, p. 524-529.

DESCRIPTORS: *X-ray absorption analysis, *X-ray diffraction analysis, *Germanium, Crystals, X-ray photography, Microphotography.

A method of using the x-ray anomalous absorption effect to obtain images of individual dislocations is described. With this method it is possible to get clear images of dislocation lines using wide focus x-ray tubes. Application of the method to several samples of germanium gave good agreement between etch pit count data and dislocation shadow count data from x-ray photographs. (Author)

Devyatkova, E. D. and Smirnov, I. A.
DER EINFLUSS DER BEIMISCHUNGEN VON HALOGEN AUF DIE WÄRMELEITFÄHIGKEIT DES BLEITELLURIDS (The Influence of the Halogen Impurities on the Conduction of Heat of Lead Telluride).
Order from TIB $1.80

Trans. in German of Fizika Tverdogo Tela (USSR) 1961, v. 3, no. 8, p. 2298-2309.

DESCRIPTORS: *Impurities, *Halogens, *Heat transfer, Lead compounds, *Tellurides.

Devyatkova, E. D. and Smirnov, I. A.
DER STREUUNGSMECHANISMUS DER STROMTRÄGER IM BLEITELLURID (The Scattering Mechanism of the Current-carrier in PbTe).
Order from TIB $2.80

Trans. in German of Fizika Tverdogo Tela (USSR) 1961, v. 3, no. 8, p. 2310-2318.

DESCRIPTORS: *Scattering, *Ionic current, *Lead compounds, *Tellurides.

Efimova, B. A., Novikov, V. I., and Ostrumov, A. G.
DIE ANISOTROPIE DER GALVANOMAGNETISCHEN EIGENSCHAFTEN VON n-Bi_2Te_3 (Anisotropy of the Galvanomagnetic Properties of n-Bi_2Te_3).
Order from TIB $1.30

Trans. in German of Fizika Tverdogo Tela (USSR) 1962 v. 4, no. 1, p. 302-304.

DESCRIPTORS: *Magnetic properties, *Bismuth compounds, *Tellurides.

Dorfman, Ya. G.
ON FERROMAGNETIC AND ANTI-FERROMAGNETIC SEMICONDUCTORS AS A SOLID STATE PROBLEM [Ob Ferromagnitnykh i Antiferromagnitykh Poluprovodnikakh kak Probleme Fiziki Tverdogo Tela]. [1961] 14p. 7 refs. MDF D 117.
Order from OTS or SLA $1.60 62-15874

Trans. of A[kademiya] N[auk] SSSR. Izvestiya. [Seriya Fizicheskaya] 1952, v. 16, no. 4, p. 412-419.

DESCRIPTORS: *Semiconductors, *Ferromagnetism, *Antiferromagnetism, *Ferrites, Crystal structure, Electrical properties, Magnetic properties, Spin, Solid state physics.

Drabkin, A. I.
ON SEMICONDUCTING PROPERTIES OF CERTAIN HIGH-OHMIC METALLIC ALLOYS [O Poluprovodnikovykh Svoistvakh Nekotorykh Vysokoomnykh Metallicheskikh Splavov]. [1961] 5p. MDF D 120.
Order from OTS or SLA $1.10 62-15871

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1955, v. 25, no. 1, p. 81-84.

DESCRIPTORS: *Semiconductors, *Electric wire, Alloys, *Copper alloys, *Nickel alloys, *Manganese alloys, Tin alloys, Electrical properties.

It is shown that a number of high-ohmic metallic alloys possess negative values of the specific resistance temperature coefficients. This attests to the clearly expressed semiconducting properties of these alloys which permits projecting a physical basis of the methods of obtaining a thermally compensated conductor from existing alloys "improved" in a specific direction. (Author)

Draganescu, M.
THE GENERAL CONDITION REQUIRED FOR AN ABRUPT INCREASE OF THE CURRENT IN THE ZENER REGION OF A PN JUNCTION. [1962] 3p. 1 ref.
Order from SLA $1.10 62-18768

Trans. of Acad[emia] Rep[ublicii] Pop[ulare] Romine. Inst[itutul] de Fizica. [Studii] si [Cercetari] de Fizica, 1961, v. 12, no. 4, p. 801-803.

DESCRIPTORS: *Semiconductors, Electric currents, Mathematical analysis.

Efimova, B. A., Kelman, E. V., and Stilbans, L. S.
DER MECHANISMUS DER STREUUNG AN DEN BEIMISCHUNGSIONEN IM Bi_2Te_3 (On the Mechanism of Scattering by Impurity Ions in Bi_2Te_3).
Order from TIB $1.80

Trans. in German of Fizika Tverdogo Tela (USSR) 1962, v. 4, no. 1, p. 152-156.

DESCRIPTORS: *Scattering, Impurities, *Ions, *Bismuth compounds, *Tellurides

Espig, H.
THE SYNTHESIS OF EMERALDS. [1962] [24]p. 6 refs.
Order from SLA $2.60 62-18839

Trans. of Chem[ische] Techn[ik] (East Germany) 1960, v. 12, no. 6, p. 327-331.

DESCRIPTORS: *Synthetic gems, *Beryl, Synthesis, Crystal growth, Zirconium compounds, *Titanium compounds, Silicates, Garnets.

A method is described for synthesizing emerald in crystals up to 2 cm size suitable for polishing of stones of 1 carat. The basic principles of this method which was carried out for the first time in Bitterfeld in 1929 is described here and the technical advances, as compared to the previous process, described, in particular, the semitechnical method most recently used. The properties of the synthetic emerald were ascertained and the recent publications of W. F. Eppler were used for limited comparisions with the emeralds produced by Chatham. We also discuss other syntheses that are analogous to our own emerald synthesis but have so far not been published. The present findings may perhaps serve as seed crystals for further explorations in this field. (Author)

Filipovich, V. N.
CONTRIBUTION TO THE THEORY OF THE SCATTERING OF X-RAYS IN GASES, LIQUIDS, AMORPHOUS SOLIDS AND POLYCRYSTALLITES, PT. II (K Teorii Rasseyaniya Rentgenovskikh Luchei v Gazakh, Zhidkostyakh, Amorfnykh Tverdykh Telakh, Polikristallakh, II) tr. by G. N. Gibson. July 60 [15]p. 8 refs. Library Communication no. 989, pt. II; DSIR NLL M. 4646 (II).
Order from OTS or SLA $1.60 62-25375

Partial trans. (p. 1622-1638) of Zhurnal Tekhnicheskoi Fiziki (USSR) 1955, v. 25, no. 9, p. 1603-1638.

DESCRIPTORS: *Gases, *Liquids, *Solids, Crystal structure, *X-ray diffraction analysis, Scattering, Theory, Fourier analysis, Crystal lattices.

The general principles of the application of the method of Fourier analysis to the interpretation of x-ray diffraction patterns of polycrystalline solids are set forth. A very accurate and general theory of the broadening of diffraction lines in relation to the dimensions of crystals and some internal defects of their lattice is developed.

Gengnagel, H.
THE MAGNETIC BEHAVIOUR OF Fe-Al SINGLE CRYSTALS. I. THE EFFECT OF DEGREE OF ORDERING ON THE MAGNETIC PROPERTIES. II. THE INFLUENCE OF PRECIPITATES ON THE COERCIVE FORCE AND REMANENCE OF Fe-Al SINGLE CRYSTAL FRAMES. Apr 63.
Order from BISI £8 15s BISI-3143

Trans. of Zeitschrift fllr Angewandte Physik (West Germany) 1961, v. 13 [no. 11] p. 527-534 and [no. 12] p. 569-576.

DESCRIPTORS: Magnetic properties, *Iron, *Aluminum, *Single crystals, Heat treatment, Anisotropy, Magnetostriction, Grain structures (Metallurgy), Hysteresis, Stresses, Metallography, Impurities, *Ferromagnetism.

Gevers, R.
ONE-DIMENSIONAL DISORDER IN SiC AND ITS EFFECT ON THE INTENSITIES OF DIFFRACTED X-RAYS. [1961] 18p. 9 refs. MDF G 115.
Order from OTS or SLA $1.60 62-15859

Trans. of a Russian article from an unidentified source, n.p., n.d.

DESCRIPTORS: *Silicon compounds, *Carbides, Silicon crystals, Crystal structure, *Crystal lattice defects, *X-ray diffraction analysis, Determinants.

The theory is developed of the x-ray scattering by SiC crystals of the usual 4-, 6- and 15- layer types, which show order in two translation directions but disorder in the third direction. A '4- layer influence' for the 4- and 6- layer types and a '6- layer influence' for the 15- layer type is postulated. Furthermore, it is put forward that four layers can never be arranged in a hexagonal close-packed way, and five layers never in a cubic way. The description of the disorder then needs one parameter α or two parameters α and β. The intensity of diffraction is expressed in terms of two quantities x_n and C_n, which themselves depend upon α (or α and β), where α (α and β) is (are) the probability (s) that a fifth (seventh) layer continues a cubic arrangement of the 4 (6) preceding layers. The line widths and displacements of the positions of certain reflexion maxima depend on the degree of order. Numerical data and comparison with experimental results will be communicated later. (Author)

Grigor'ev, A. T. and Sokolovskaya, E. M.
SOLID STATE TRANSFORMATIONS IN CHROMIUM AND ITS ALLOYS (Prevrashcheniya v Tverdom Sostoyanii v Khrome i Splavakh na Ego Osnove). Oct 62 [20]p. 32 refs. RTS 2171.
Order from OTS or SLA $1.60 63-15276

Trans. of Mosc[ow] U. Vest[nik]. Ser[iya] 2: Khim[iya] (USSR) 1961, v. 16, no. 6, p. 3-15.

DESCRIPTORS: Chromium, *Chromium alloys, Transformations, Solid state physics, *Heat resistant alloys, Mechanical properties.

Grüneisen, E., Rausch, K., and Weiss, K.
STUDIES ON ELECTRIC AND THERMAL CONDUCTIVITY OF BISMUTH SINGLE CRYSTALS WITHIN A TRANSVERSAL MAGNETIC FIELD. [1962] 24p. 10 refs.
Order from SLA $2.60 63-10741

Trans. of Annalen der Physik (East Germany) 1950, ser. 6, v. 7, no. 1/2, p. 1-17.

DESCRIPTORS: *Bismuth, *Single crystals, *Electrical conductance, *Thermal conductivity, Magnetic fields, Crystal lattices, Metallic crystals.

The influence of transversal magnetic fields on the electric- and thermal conductivity of Bi-S-crystals (main axis ⊥ rod axis) is studied particularly with regard to the so called reversal effects (resistance changes on field reversal). Lattice and electronic contributions to the thermal conductivity are separated. (Author)

Gulyaev, Yu. V.
ZUR THEORIE DER STROMTRÄGERREKOMBINATION AN LINEAREN VERSETZUNGEN IN HALBLEITERN (On the Theory of Current-carrier Recombination on Dislocations in Semiconductors).
Order from TIB $1.80

Trans. in German of Fizika Tverdogo Tela (USSR) 1962, v. 4, no. 5, p. 1285-1289.

DESCRIPTORS: Theory, Electric current, *Semiconductors

Handel, Petru.
SLOW SURFACE STATE RELAXATION IN SEMICONDUCTORS. [1962] 13p. 6 refs.
Order from SLA $1.60 62-18913

Trans. of Acad[emia] Rep[ublicii] Pop[ulare] Romine. Inst[itutul] de Fizica. Studii si Cerc[etari] de Fiz[ica] 1961, v. 12, no. 4, p. 753-763.

DESCRIPTORS: *Semiconductors, Surface properties, Films, Oxides, Impurities, Electrons, *Relaxation time, Space charges, *Electric fields.

Ignatkov, V. D., and Kosenko, V. E.
DIFFUSION OF TELLURIUM IN GERMANIUM. 19 Feb 62, 10p. 5 refs.
Order from OTS or SLA $1.10 AEC-tr-5532

Trans. of #Fizika Tverdogo Tela (USSR) 1962, v. 4, no. 6, p. 1627-1631.

DESCRIPTORS: *Single crystals, *Germanium, *Tellurium, *Diffusion, Solubility, Tracer studies.

The diffusion and solubility of tellurium in monocrystalline germanium in the range of temperature from 770° to 900°C was studied. The investigation was performed with the help of the radioactive isotope Te^{125} by the method of removing layers. Diffusion took place from tellurium vapor in evacuated quartz ampules. Three simultaneously operating velocities of diffusion of tellurium in germanium, with correspond-

ing solubilities, were discovered. A new type of diffusion, called "presurface", was found. Resulting were the following parameters of diffusion of tellurium in germanium:
(1) "presurface" diffusion $D_p = 2 \exp\left(-\frac{65,000}{RT}\right)$;
(2) "slow" diffusion $D_s = 6 \exp\left(-\frac{56,000}{RT}\right)$;
maximum solubility was observed near 840°C and was $C_{o_s} = 6.8 \times 10^{18}$ cm^{-3}. (3) Temperature dependence of the coefficient of "fast" diffusion was not studied. At 800°C, $D_f = 5 \times 10^{-7}$ cm^2/sec. (Author)

Ilisavskii, I. V.
DER EINFLUSS DER EINACHSIGEN DEFORMATION AUF DIE ELEKTRISCHE LEITFAEHIGKEIT DES WISMUTTELLURIDES UND DES WISMUTSELENIDES (Influence of Uniaxial Deformation on Electroconductivity of Bi_2Te_3 and Bi_2Se_3).
Order from TIB $1.10

Trans. in German of Fizika Tverdogo Tela (USSR) 1962, v. 4, no. 3, p. 818-820.

DESCRIPTORS: *Conductivity, Electricity, *Bismuth compounds, *Tellurides, Selenides.

Klinger, M. I.
THEORIE DES PIEZOWIDERSTANDES IN Bi_2Te_3 (The Theory of Piezo-resistance in Bi_2Te_3).
Order from TIB $1.55

Trans. in German of Fizika Tverdogo Tela (USSR) 1960, v. 2, no. 6, p. 1353-1356.

DESCRIPTORS: *Resistance, *Bismuth compounds, *Pressure, *Tellurides, *Piezoelectric effect.

Konovalenko, B. M., Rybkin, S. M., and Tuchkevich, V. M.
ON THE SENSITIVITY OF GERMANIUM PHOTODIODES TO X-RAYS [O Chuvstvitel'nosti Germanievykh Fotodiov k Rentgenovskim Lucham]. [1961] 3p. 6 refs. MDF K 133.
Order from OTS or SLA $1.10 62-23117

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1955, v. 25, no. 1, p. 18-20.

DESCRIPTORS: *Photoelectric cells (Semiconductor), *Diodes (Semiconductor), *Germanium, *X-rays, Sensitivity.

Kontorova, T. A.
ON THE QUESTION OF THE TEMPERATURE DEPENDENCE OF THE THERMAL e.m.f. OF IMPURITY SEMICONDUCTORS [K Voprosu o Temperaturnoi Zavisimosti Termoeds Primesnykh Poluprovodnikov]. [1961] 17p. MDF K 135.
Order from OTS or SLA $1.60 62-23116

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1954, v. 24, no. 9, p. 1687-1696.

DESCRIPTORS: *Semiconductors, Impurities, *Thermal conductivity, Temperature, Lattices, Oscillation, Models (Simulations), *Germanium, Low temperature research.

At the lowest temperatures, the thermal e.m.f. should increase approximately proportionally to T (the degeneration region), should reach a certain maximum here and then decrease as T increases further, as is usual for the ordinary model of an impurity semiconductor (classical region). Here, the thermal e.m.f. can reach some minimum which can again correspond to the degeneration region for a sufficiently large impurity concentration N or low activation energy ϵ'. If the transition from the first part of the curve to the second part occurs in that temperature range where a dominant part is played by the ionic impurities scattering the current carriers, then the transition must be observed, to lower values of the thermal e.m.f., corresponding to scattering by lattice oscillations, as the temperature increases further. Therefore, the highest possible value of thermal e.m.f. must fall in the low temperature range and, precisely, in the transition region from the initial part of the curve, corresponding to degeneration, to the second, 'classical', part. Later, as the temperature increases, the impurity range is displaced by the range of 'intrinsic' values of the thermal e.m.f. We do not dwell, however, on an analysis of this latter. (Author)

Krinchik, G. S.
MAGNETO-OPTICS OF RARE-EARTH IONS IN FERROMAGNETIC CRYSTALS. 3 Apr 63 [12]p. 8 refs. AID rept. T-63-46.
Order from OTS or SLA $1.60 63-19028

Trans. of #Fizika Tverdogo Tela (USSR) 1963, v. 5, no. 2, p. 373-380.

DESCRIPTORS: *Rare earths, Ions, *Magneto-optic effect, *Ferrites, Garnet, Crystals, Impurities, Ferromagnetic materials, *Lasers, Design.

An experimental and theoretical investigation of ferrite garnet crystals doped with rare-earth ions and subject to an external magnetic field is presented. According to the author, the energy level structure of such a system, based on the exchange interaction effect, lends itself to the design of an inherently controllable infrared laser.

Krishtal, M. A.
ON THE METHOD OF DETERMINING THE SELF-DIFFUSION COEFFICIENT OF IRON IN ALLOYED AUSTENITE [K Metodike Opredelenie Koeffitsienta Samodiffuzii Zheleza v Legirovannom Austenite]. [1961] 7p. 13 refs. MDF K-152.
Order from OTS or SLA $1.10 62-15915

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1955, v. 25, no. 1, p. 144-148.
Another trans. is available from SLA as RT-2818, 8p.

DESCRIPTORS: *Austenite, *Iron alloys, *Diffusion, Radioactive isotopes, Crystal lattices, Numerical analysis.

A new method is described of determining the self-diffusion of iron in austenite based on the determination of the velocity of the decarbonization process of graphitized cast iron. Using the method described, the dependence on the Si, Ni content and on temperature was studied of the self-diffusion coefficient of iron in Fe-C-Si and Fe-C-Ni alloys. The results obtained are in agreement with the assumption of a self-diffusion 'relay' mechanism in iron. (Author)

Liberberg, T. I. and Tolpygo, K. B.
MULTI-ELECTRON CONSIDERATION OF THE MOTION OF AN ELECTRON (HOLE) IN PERTURBED CRYSTALS [Mnogoelektronnoe Rassmotrenie Dvizheniya Elektrona (Dyrki) v Vozmushchennom Kristalle]. [1961] 12p. 14 refs. MDF L-106.
Order from OTS or SLA $1.60 62-23221

Trans. of Zh[urnal] Eksp[erimental'noi] i Teor[eticheskoi] Fiz[iki] (USSR) 1954, v. 26, no. 1, p. 35-41.

DESCRIPTORS: *Crystals, Electrical conductance, Electric potential, *Electrons, Ions, Motion, Theory, Vector analysis, Functions, Electron transitions.

There is considered the motion of an additional electron (hole) introduced into a dielectric in the field of some defect with the aid of the multi-electron equation in the tightly-bound electron approximation. There is computed, here, the atom (ion) deformation by a field of additional charge. Using Hartree's approximation, the problem is reduced successfully to the solution of a partial differential equation for one particle. This equation appears to be useful in the case of a "hole". Limiting cases are considered of very narrow and very broad potential wells created by the defect. In the latter case, if the field of the defect varies sufficiently smoothly, the above-mentioned equation reduces to the Schroedinger equation in which the effective mass of the particles and some effective potential appear. There is established a connection between the latter and a potential defect. (Author)

Maslov, V. N. and others.
FRAKTOGRAPHISCHE UNTERSUCHUNG VON GERMANIUMEINKRISTALLEN (Fractographic Investigation of Germanium Monocrystals).
Order from TIB $1.10

Trans. in German of #Kristallografiya (USSR) 1962, v. 7, no. 3, p. 477-479.

DESCRIPTORS: *Fractography, *Germanium, *Crystals.

Milevskii, L. S.
DER EINFLUSS DER THERMISCHEN BEHANDLUNG AUF DIE LEBENSDAUER DER STROMTRÄGER IN MIT KUPFER GEDOPTEM SILIZIUM (Influence of Thermal Treatment on Current Carrier Lifetime in Si doped with Cu).
Order from TIB $1.10

Trans. in German of Fizika Tverdogo Tela (USSR) 1962, v. 4, no. 3, p. 825-827.

DESCRIPTORS: *Heat treatment, Electric currents, *Copper, *Silicon

Paramanova, R. A. and Rzhanov, A. V.
UNTERSUCHUNG DER VOLUMENREKOMBINATION IN GERMANIUMKRISTALLEN MIT KUPFERVERUNREINIGUNG (Investigation of Volume Recombination in Germanium Crystals with Copper Impurity).
Order from TIB $2.10

Trans. in German of Fizika Tverdogo Tela (USSR) 1962, v. 4, no. 7, p. 1820-1825.

DESCRIPTORS: Volume, *Germanium, Crystals, *Impurities, *Copper

Pekar, S. I.
RESEARCH IN ELECTRON THEORY OF CRYSTALS. Feb 63, 240p. 73 refs.
Order from OTS $3.00 AEC-tr-5575

Trans. of Issledovaniya po Elektronnoi Teorii Kristallov, Moscow/Leningrad, 1951 [256p.]
Partial translations are available from SLA as RT-4154, 36p. (preface and chap. 1, p. 5-37) and RT-4153, 5p. (bibliography, p. 254-256).

DESCRIPTORS: *Crystals, Dielectrics, *Semiconductors, Ions, *Electrons, Polarization, Motion, Theory, Photons, *Quantum mechanics, Energy, *Color centers, Photoelectric effect, Dissociation.

Contents:
Introduction
Theory of polarons with classical consideration of the motion of the crystal ions
Polaron theory with quantum-mechanical consideration of ion motion
Theory of F centers and F' centers in the classical consideration of ion motion
Theory of F centers with quantum mechanical consideration of the ion motion
Comparison of theory with experiment. Application of theory to specific crystals
Appendix: Attempts at an analysis of polarons under the assumption of weak interaction between the electron and the polarization oscillations

Pilat, I. M., Borodinets, G. S. and others.
UEBER EINIGE EIGENSCHAFTEN DES SYSTEMS CdSb - ZnSb (Some Properties of CdSb -ZnSb System).
Order from TIB $1.55

Trans. in German of Fizika Tverdogo Tela (USSR) 1960, v. 2, no. 7, p. 1522-1525.

DESCRIPTORS: Physical properties, *Cadmium compounds, *Antimony compounds, *Zinc compounds

Pines, B. Ya.
OUTLINES OF THE PHYSICS OF METALS. 25 Feb63 [376]p. 134 refs. FTD-TT-62-1355, AD-299 678.
Order from OTS or SLA $21.00 63-19081

Unedited rough draft trans. of mono. Ocherki po Metallofizike, Khar'kov, 1961, 315p.

DESCRIPTORS: *Metals, *Alloys, *Metallography, Phase studies, Stability, Surface tension, Diffusion, *Crystal structure, Thermodynamics.

Contents:
Phase equilibrium: Equilibrium diagrams of metallic alloys
Surface tension of metals and alloys
Self-diffusion
Heterodiffusion.

Samoilovich, A. G.
DIE ANISOTROPISCHE STREUUNG DER ELEKTRONEN AN DEN IONISIERTEN BEIMISCHUNGEN UND AN DEN AKUSTISCHEN PHONONEN (Anisotropic Scattering of Electrons on Ionized Impurities as well as on the Acoustic Phonons).
Order from TIB $4.05

Trans. in German of Fizika Tverdogo Tela (USSR) 1961, v. 3, no. 11, p. 3285-3298.

DESCRIPTORS: *Scattering, *Electrons, Ionization, Impurities, Acoustics, *Phonons.

Samoilovich, A. G. and Kononova, M. V.
MAGNETIC PROPERTIES OF THE EXCITON, tr. by B. W. Kuvshinoff. 28 Feb 62 [6]p. 3 refs. APL/JHU TG 230-T275.
Order from OTS or SLA $1.10 62-25068

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 101, no. 1, p. 55-57.

DESCRIPTORS: *Magnetic properties, *Excitation, *Semiconductors, Electrons, Quantum mechanics.

Samsonov, G. V., Neshpor, V. S., and Kudintseva, G. A.
ON THE RELATIONSHIP BETWEEN THE THERMO-EMISSIVE CONSTANTS OF THE TRANSITION METALS (AND OF THEIR COMPOUNDS WITH SOME METALLOIDS) AND THEIR ELECTRONIC STRUCTURE. [1962] [11]p. 10 refs.
Order from OTS or SLA $1.60 62-20139

Trans. of #Radiotekh[nika] i Elektron[ika] (USSR) 1957, v. 2, no. 5, p. 631-636.

DESCRIPTORS: *Transition elements, *Metalloids, *Thermionic emission, Atomic structure, *Work functions

The present report describes an attempt at establishing a relationship between the work function of the electrons in thermo-emission and the electronic structure of the transition metals, and also of their compounds with boron, carbon and nitrogen. It is shown that the numerical value of the work function is related to the principal quantum number and to the number of electrons in the incomplete d-shell, and, in the case of the compounds of the transition metals with the metalloids, also to the ionization potential of the metalloids. (Author)

Savitskii, K. V. and Zagrebennikova, M. P.
TO THE QUESTION OF THE NATURE OF THE PLASTIC DEFORMATION OF THE SURFACE LAYERS OF RUBBING BODIES [K Voprosu o Prirode Plasticheskikh Deformatsii Poverkhnostnykh Sloev Trushchikhsya Tel]. [1961] 7p. 3 refs. MDF S-102.
Order from OTS $0.50 62-11381

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 103, no. 4, p. 605-608.

DESCRIPTORS: *Copper, *Aluminum, *Deformation, Friction, Surfaces, Plasticity, *Crystal lattices.

Semenkovich, S. A. Kolemoets, L. A., and Kolemoets, N. V.
KRISTALLISATION VON Bi, Te UND Bi_2Te_3 MIT HILFE DES PELTIER-EFFEKTES (Crystallization of Bi, Te and Bi_2Te_3 by Means of the Peltier Effect).
Order from TIB $1.55

Trans. in German of Fizika Tverdogo Tela (USSR) 1961, v. 3, no. 5, p. 1597-1600.

DESCRIPTORS: *Crystallization, *Bismuth, *Tellurium, Bismuth compounds, Tellurides, *Piezoelectric effect.

Shtrum, E. L.
DIE HALBLEITEREIGENSCHAFTEN DER PHASE $AgFeTe_2$ (Semiconducting Properties of the Phase $AgFeTe_2$).
Order from TIB $1.80

Trans. in German of Fizika Tverdogo Tela (USSR) 1960 [v. 2] no. 7, p. 1489-1493.

DESCRIPTORS: *Semiconductors, *Silver compounds, *Iron compounds, *Tellurides

Tyablikov, S. V.
ENERGY SPECTRA OF ELECTRONS IN IONIC CRYSTALS (TIGHT-BINDING CASE) [Energeticheskii Spektr Elektronov v Ionnykh Kristallakh (Sluchai Sil'noi Svyazi). [1961] [13]p. 13 refs. MDF T-106.
Order from OTS or SLA $1.60 62-15898

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1952, v. 22, no. 2, p. 325-331.

DESCRIPTORS: *Electrons, *Polarization, *Crystal lattices, Dielectrics, Semiconductors, Quantum mechanics.

The results cited show that the polaron spectrum (i.e. electrons with their induced polarization) has a band character independently of whether the coupling with the polarized oscillations is weak or strong and so any doubts would be unfounded. On the whole the polaron spectrum is a number of narrow bands located at a certain distance from each other. It is possible that, starting at a certain place, they will overlap. (Author)

Zavaritskii, N. V.
PROPERTIES OF THIN LAYERS OF SUPERCONDUCTING METALS. [1962] 7p. (figs. omitted) 2 refs.
Order from OTS or SLA $1.10 62-20284

Trans. of [Akademiya Nauk] SSSR. Doklady, 1952, v. 82, no. 2, p. 229-231.
Other translations are available from OTS or SLA $1.10 as 61-18927 [1961] 7p. and 62-23186, MDF Z-121 [1960] 4p.

DESCRIPTORS: *Superconductors, *Thin films, *Tin, *Thallium, Superconductivity, Physical properties.

For abstract see Technical Translations 6:621, 1961

Zuber, K.
FREQUENCY VARIATIONS PRODUCED BY THE EFFECT OF NEUTRONS IN A THICK X-CUT QUARTZ CRYSTAL. [1962] 13p. 7 refs.
Order from SLA $1.60 63-10159

Trans of Istanbul U. Fen Fakultesi Mecmuasi. [Revue] Ser. C. (Turkey) 1958, v. 23, p. 42-49.

DESCRIPTORS: *Frequency, *Neutrons, *Quartz, *Crystals, Elasticity, Anisotropy, Crystal structure, Radiation damage, Vibration, Radiation effects.

The frequencies of the strongest natural vibrations of a thick x-cut quartz crystal are determined before and after neutron irradiation. Increases as well as decreases are found. On the basis of the results obtained by Bechmann attempts are made to draw conclusions with respect to the variation of the moduli of elasticity. $\frac{dc_{11}}{c_{11}}$ is found to be positive. The maximum negative value is found for $\frac{dc_{12}}{c_{12}}$ (Author)

Theoretical Physics

Extermann, R. [C.] and Wannier, G.
THEORY OF DIFFRACTION OF LIGHT BY SUPERSONIC WAVES, PT. I. [1962] 12p. 3 refs.
Order from SLA $1.60 63-10092

Trans. of Helvetica Physica Acta (Switzerland) 1936, v. 9, p. 520-532.

DESCRIPTORS: *Diffraction, *Light, Sound, Supersonic characteristics, Theory, Numerical methods and procedures, Special functions, Electromagnetic waves.

Extermann, Richard C.
THEORY OF DIFFRACTION OF LIGHT BY SUPERSONIC WAVES, PT. II. [1962] 29p. 4 refs.
Order from SLA $2.60 63-10091

Trans. of Helvetica Physica Acta (Switzerland) 1937, v. 10, p. 185-217.

DESCRIPTORS: *Diffraction, *Light, Sound, Supersonic characteristics, Theory, Equations, Propagation, Spheres, Numerical methods and procedures, Electromagnetic waves.

Kampen, N. G. van.
THE FOKKER-PLANCK EQUATION. [1962] 22p. 56 refs.
Order from SLA $2.60 62-18605

Trans. of Ned[erlands] Tidschrift [voor] Natuur[kunde] 1960, v. 26 [no. 8] p. 225-238.

DESCRIPTORS: *Statistical mechanics, Mechanics, Probability, Semiconductors, Electron transitions, *Partial differential equations, Integration

In the present article first the general derivation of the Fokker-Planck equation is given. Next some applications are treated and finally the limits of applicability are briefly discussed.

Kavetzkis, V. I. and Yutzis, A. P.
ANALYTIC SINGLE-ELECTRON WAVE FUNCTIONS IN A MULTI-CONFIGURATION APPROXIMATION FOR HELIUM AND BERYLLIUM-TYPE [Analiticheskie Odnoelektronnye Volonvye Funktsii v Mnogokonfiguratsionnom Priblizhenii dlya Atomov Tipa Geliya i Berilliya]. [1961] 11p. 6 refs. MDF K-109.
Order from OTS or SLA $1.60 62-23017

Trans. of Zh[urnal] Eksp[erimental'noi] i Teor[eticheskoi] Fiz[iki] (USSR) 1953, v. 25, no. 3, p. 257-263.

DESCRIPTORS: *Quantum mechanics, *Electrons, Wave characteristics, *Helium, *Beryllium, Hydrogen, Lithium, Boron, Partial differential equations.

The question is considered of the determination of the parameters of analytic single-electron wave functions in a multi-configuration approximation. It is shown that this determination leads, in practice, to the determination of the corresponding parameters in individual two-configuration approximations. The multi-configuration approximation is applied to the ground configuration of the H^-, He, Li^+, Li^-, Be and B^+ atoms using the analytic hydrogen-like single-electron wave functions for which the parameters are determined in the multi-configuration approximation. (Author)

Peterkop, R.
ASSYMPTOTIC DISTRIBUTION OF THE WAVE FUNCTION OF CHARGED PARTICLES (Asimptoticheskoe Razlozhenie Volnovoi Funktsii Zaryazhennykh Chastits). [1962] [14]p. (foreign text included) 6 refs.
Order from OTS or SLA $1.60 63-10508

Trans. of Akademiya Nauk Latviiskoi SSR [Riga]. Izvestiya, 1960, no. 9(158) p. 79-84.

DESCRIPTORS: *Charged particles, Electrons, Scattering, *Quantum mechanics, Potential theory, Series, Perturbation theory.

Thermodynamics

Brauer, H.
HEAT TRANSFER AND RESISTANCE TO FLOW IN ALIGNED AND STAGGERED ARRANGEMENTS OF FINNED TUBES. Feb 63.
Order from BISI £8 5s BISI-3085

Trans. of Dechema Monographie, (West Germany) 1962, v. 40, p. 41-76 (reprinted in Mannesmann Forschungsberichte [sic] 1962, no. 154).

DESCRIPTORS: *Heat transfer, Pipes, Surface.

Chernobylskii, I. I. and Semilet, Z. V.
UNTERSUCHUNG DES WÄRMEABGABEKOEFFIZIENTEN EINES BERIESELUNGS-WÄRMEAUSTAUSCHERS VON SEITEN DER BERIESELUNG (Investigation of the Heat-emission Coefficient of an Irrigation Heat-exchanger on the Part of the Irrigation). 11p.
Order from TIB $2.00

Trans. in German of Khimicheskaya Promyshlennost' (USSR) 1958, no. 4, p. 249-252.

DESCRIPTORS: *Irrigation systems, *Heat exchangers, Heat transfer.

Cordier, Henri and Maimi, René.
THERMOKINETICS: EXPERIMENTAL STUDY OF THE INFLUENCE OF PRESSURE ON THERMAL CONTACT RESISTANCE. [1962] 5p. 3 refs.
Order from SLA $1.10 63-10777

Trans. of Acad[emie] des Sciences [Paris]. Comptes Rendus (France) 1960, v. 250, 25 Apr, p. 2853-2855 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Thermodynamics, Pressure, Resistance, Thermal conductivity, Thermocouples

Datsev, A. B.
ON THE TWO-DIMENSIONAL STEFAN PROBLEM [O Dvukhmernoi Zadache Stefana]. [1961] 7p. 12 refs. MDF D 104.
Order from OTS or SLA $1.10 62-15867

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 101, no. 3, p. 441-444.

DESCRIPTORS: *Phase studies, Transformations, *Ice, Water, Freezing, Integral equations.

Kogan, V. S. and Pines, B. Ya.
EQUILIBRIUM DIAGRAM OF THE In - Pb SYSTEM. [1962] 7p. (figs. omitted) 6 refs.
Order from OTS or SLA $1.10 62-20286

Trans. of [Akademiya Nauk] SSSR. Doklady, 1952, v. 87, no. 5, p. 771-773.

DESCRIPTORS: *Lead alloys, *Indium alloys, Thermodynamics, Transformations.

The basic features of the equilibrium diagram for the In - Pb system are: (1) Narrow regions of mixtures of two phases, $\alpha + \gamma$ and $\gamma + \beta$, which grow wider at temperatures close to the melting point; (2) The appearance of a liquid phase at the temperature of 160° in alloys containing 20 to 25at.% Pb and at a temperature in the neighborhood of 170° in alloys containing 28 to 36 at.% Pb; (3) The absence of transformations in the gamma phase at a temperature in the neighborhood of 160° in the concentration range 25 to 30 at.% Pb; (4) The wide region in which stratification of liquid + β occurs at temperatures above 170°.

Kosterin, S. I., Leontev, A. I., and Fedorov, V. K.
METHODS OF GENERALIZING EXPERIMENTAL DATA ON CONVECTIVE HEAT-EXCHANGE IN THE CASE OF GAS MOTION IN THE INITIAL SECTION OF A PIPE. [1962] [8]p. 13 refs. C. E. Trans. 2723; [DSIR] NLL M. 8980.
Order from OTS or SLA $1.10 63-15188

Trans. of Teploenergetika (USSR) 1962, v. 9, no. 5, p. 70-72.

DESCRIPTORS: *Heat transfer, *Gas flow, Convection, *Turbulent boundary layer, Pipes, Mathematical analysis, Compressible flow, Experimental data.

A new method is proposed for generalizing experimental data on convective heat exchange in a turbulent boundary layer of gas. A general-purpose heat-transfer law is obtained for the turbulent boundary layer of a compressible gas. (Author)

Plank, R.
THE THERMODYNAMIC PROPERTIES OF HELIUM (Die Thermodynamischen Eigenschaften von Helium) tr. by Frank E. E. Germann. Mar 62 [5]p. (foreign text included).
Order from OTS or SLA $1.10 62-25668

Trans. of Kältetechnik (West Germany) 1961, v. 13, no. 6, p. 229.

DESCRIPTORS: *Helium, *Thermodynamics, Liquefied gases, Boiling.

Pudikov, V. V.
DEVICE FOR THERMAL ANALYSIS (Ustanovka dlya Termicheskogo Analiza). [1962] [6]p. (foreign text included).
Order from OTS or SLA $1.10 62-18615

Trans. of #Zavodskaya Laborat[oriya] (USSR) 1959, v. 25, no. 6, p. 748-749.

DESCRIPTORS: *Calorimetry, *Thermocouples, *Thermoelectricity, Potentiometers, Instrumentation.

Rudnitskii, A. A. and Tyurin, I. I.
THE INVESTIGATION AND CHOICE OF ALLOYS FOR HIGH-TEMPERATURE THERMOCOUPLES, tr. by M. de O. Tollemache. July 58 [24]p. 23 refs. AERE Lib/Trans 798.
Order from OTS or SLA $2.60 63-19225

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1956, v. 1, no. 5, p. 1074-1090.
Other translations are available from SLA as R-4933, 23p. and R-5249, 23p.

DESCRIPTORS: *Thermocouples, *Heat resistant alloys, *Rhodium alloys, *Platinum alloys, Tungsten alloys, Rhenium alloys, Thermoelectricity, Stability, Electrical insulation.

Alloys of platinum with rhodium containing up to 40% rhodium, pure rhodium and the ternary alloys Pt - Rh - W, and Pt - Rh - Re were used in investigations of the problems of the stability of thermoelectrical characteristics in relation to the conditions of heat treatment of thermoelectrode materials. The thermoelectrical homogeneity of thermoelectrodes was studied. It was established that the homogeneity of the alloys chosen was entirely satisfactory. The investigation of the stability of the thermoelectric characteristics of thermoelectrodes at a temperature of 1350° for a period of 588 hours showed that the most stable thermoelectrodes are pure rhodium and the alloy 80% Pt + 20% Rh. It was established that the thermocouple Rh - (80% Pt + 20% Rh) is sufficiently stable at 1800°, if corundite capillary insulation is used. Its thermoelectromotive force after one hour's working time under these conditions alters by 5.34 microvolts, or by 0.07% at the melting point of platinum, 1773.5°. The advantage of this thermocouple is the possibility of using it in an oxidising atmosphere (in air), and also in a vacuum and in an atmosphere of inert gas.

Sevruk, I. G.
ON THE SOLENESS OF SOLUTION OF BASIC PROBLEM CONCERNING FREE THERMAL CONVECTION OF LIQUID. 18 Jan 63, 8p. 2 refs. FTD-TT-62-1613.
Order from OTS or SLA $1.10 63-15520

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Matematika (USSR) 1958, no. 4, p. 218-221.

DESCRIPTORS: Liquids, *Thermal conductivity, *Convection, Mathematical analysis.

Shitsman, M. E.
INVESTIGATION OF HEAT TRANSFER DURING THE COOLING OF WATER IN THE NEAR-CRITICAL REGION (Issledovanie Teplootdachi pri Okhlazhdenii Vody v Okolokriticheskoi Oblasti). Sep 62 [12]p. 14 refs. RTS-2133.
Order from OTS or SLA $1.60 63-15693

Trans. of Teploenergetika (USSR) 1962 [v. 9] no. 1, p. 83-86.

DESCRIPTORS: *Heat transfer, Cooling, *Water, Thermocouples, Turbulence, Equations of state.

Results of an experimental investigation and a criterion processing of experimental results on the heat transfer during cooling with turbulent flow of water in the pressure range 225 to 260 atm abs are given. (Author)

Subbotin, V. I., Ibragimov, M. Kh., and Nomofilov, E. V.
HEAT TRANSFER IN THE REGION OF THERMAL STABILIZATION FOR LIQUID METALS FLOWING TURBULENTLY IN A TUBE. 1 Mar 63 [11]p. 14 refs. AID rept. T-63-22.
Order from OTS or SLA $1.60 63-15916

Trans. of #Atomnaya Energiya (USSR) 1962, v. 13, no. 2, p. 155-161.

DESCRIPTORS: *Heat transfer, *Liquid metals, Pipes, *Fluid dynamics properties, Stabilization, Temperature, Measurement, Thermodynamics.

In this study, local heat transfer coefficients of a turbulently flowing liquid metal ($Pr \simeq 0.02$) in the region of thermal stabilization (l_T = 5, 10, 15 diameters) were determined for $Re = 10^4$ to $2 \cdot 10^5$. Two determination methods were used: measurement and computation of temperature profiles in the flow without taking thermal contact resistance into account, and direct measurement of wall temperatures with allowance for thermal contact resistance. Hydrodynamic flow stabilization was maintained constant at ($l_T \simeq 30$ d) throughout the experiments. (Author)

Wave Propagation

Dolukhanov, M. P.
EFFECT OF METEOROLOGICAL REGIONS IN THE LOWER LAYERS OF THE ATMOSPHERE ON ULTRA-SHORT WAVE PROPAGATION CONDITIONS. [1961] 33p. MDF D-116.
Order from OTS or SLA $3.60 62-15873

Trans. of mono. [Rasprostranenie Radiovoln] Radiowave Propagation, Moscow, 1952, chap. 7, sec. 7, p. 436-462.
Another trans. is available from SLA as R-00795, 33p.

DESCRIPTORS: *Wave transmission, *Radio transmission, Radio waves, Propagation, Ultra high frequency, Meteorological parameters, *Atmospheric refraction, *Waveguides, *Troposphere, Scattering, Absorption, Vector analysis, *Radio reception, Stability.

Dolukhanov, M. P.
LONG RADIOWAVE PROPAGATION: PHYSICAL PHENOMENA IN LONG WAVE PROPAGATION; PECULIARITIES OF LONG RADIOWAVE PROPAGATION; METHODS OF COMPUTING FIELD INTENSITY. [1961] 14p. MDF D-115.
Order from OTS or SLA $1.60 62-15872

Trans. of mono. [Rasprostranenie Radiovoln] (Radiowave Propagation) Moscow, 1952, chap. 4, sects. 1-3.

DESCRIPTORS: Wave transmission, *Radio transmission, Radio waves, Low frequency, Propagation, *Ionosphere, Reflection, Electron density, *Waveguides, Antennas, Oscillation, Periodic variations, Ionospheric disturbances.

Dolukhanov, M. P.
PROPAGATION OF RADIO WAVES, 2D ED. 15 Feb 63 [488]p. 75 refs. FTD-TT-62-582, AD-297 561.
Order from OTS or SLA $23.50 63-15733

Unedited rough draft trans. of mono. Rasprostranenie Radiovoln, 2d ed., Moscow, 1960, 391p.

DESCRIPTORS: *Propagation, *Radio waves, Propagation, *Troposphere, Structures, *Ionosphere, *Ionospheric propagation, *Atmospherics, *Noise (Radio), *Extraterrestrial radio waves.

Contents:
General questions of radio-wave propagation
Propagation of radio ground waves; Basic definitions
Effect of the troposphere upon ground-wave propagation conditions; Propagation of troposphere waves; General properties of the troposphere
Structure of the ionosphere and propagation of radio waves in the ionosphere
Propagation of ionosphere waves; Very long and long radiowaves
Atmospheric and cosmic radio noise.

Lyakhov, G. M.
REFLECTION AND REFRACTION OF SHOCK WAVES IN MULTICOMPONENT MEDIA AND IN WATER. [1962] 12p. (figs. omitted) 6 refs.
Order from OTS or SLA $1.60 62-20252

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: [Mekhanika i Mashinostroenie] 1959, no. 5, p. 58-63.
Another trans. is available from OTS $0.50 as 61-11181, APL/JHU TG-230-T203, 29 Nov 60, 11p.

DESCRIPTORS: *Shock waves, *Water, Reflection, Refraction.

For abstract see Technical Translations 5:520, 1961

Mikaelyan, A. L. and Pistol'kors, A. A.
ELECTROMAGNETIC WAVES IN A MAGNETIZED FERRITE IN THE PRESENCE OF CONDUCTING PLANES [Elektromagnitnye Volny v Namagnichennom Ferrite pri Nalichii Provodyashchikh Ploskostei]. [1961] 14p. 4 refs. MDF M 102.
Order from OTS or SLA $1.60 62-23092

Trans. of Radiotekhnika (USSR) 1955, v. 10, no. 3, p. 14-24.
Other translations are available from OTS or SLA $1.60 as 62-14042 [1962] 15p. and from SLA as RT-4103.

DESCRIPTORS: *Wave transmission, *Electromagnetic waves, Propagation, *Ferrites, Magnetic fields, Partial differential equations.

Questions of electromagnetic wave propagation in a ferrite acted upon by a constant magnetic field are analyzed, when one and two perfectly conducting planes are present. (Author)

Troitskii, V. N.
ULTRA-SHORT WAVE REFLECTION FROM LAMINAR INHOMOGENEITIES OF THE TROPOSPHERE [Otrazhenie Ul'trakorotkikh Voln ot Sloistykh Neodnorodnostei Troposfery]. [1961] 14p. 7 refs. MDF T-118.
Order from OTS or SLA $1.60 62-15905

Trans. of Radiotekhnika (USSR) 1956, v. 11, no. 1, p. 7-16.

DESCRIPTORS: Wave transmission, *Radio transmission, Radio waves, Ultra high frequency, Propagation, *Ionosphere, Reflection, Atmospheric temperature, Humidity, Dielectrics, Permeability, Polarization

Various reasons are considered for the appearance of laminar inhomogeneities of the troposphere. Formulas are given to determine the coefficients of radiowave reflection from the laminar inhomogeneities at oblique incidence for various kinds of layers. The question is analyzed of the role of the phenomenon of radiowave reflection from the laminar inhomogeneities in ultrashort wave propagation at great distances beyond the limits of direct visibility. (Author)

Vainshtein, L. A.
SURFACE ELECTROMAGNETIC WAVES OVER CORRUGATED STRUCTURES [Poverkhnostnye Elektromagnitnye Volny nad Grebenchatoi Strukturoi]. [1961] 17p. 6 refs. MDF V 100.
Order from OTS or SLA $1.60 62-19895

Trans. of #Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1956, v. 26, no. 2, p. 385-397.
Another trans. is available from LC or SLA mi$2.70, ph$4.80 as 59-20282 [1959] 23p.

DESCRIPTORS: *Waveguides, Surface properties, *Wave transmission, *Electromagnetic waves, Propagation, Theory, Equations.

For abstract see Technical Translations 2: 903, 1959.

Vvedenskii, B. A.
ON THE EFFECT OF REFRACTION IN THE TROPOSPHERE ON ULTRASHORT RADIOWAVE PROPAGATION BY DIFFRACTION. [1961] 20p. 21 refs. MDF V 118.
Order from OTS or SLA $1.60 62-19892

Trans. of A[kademiya] N[auk] SSSR. Izvestiya. Ser[iya] Fizicheskaya, 1942, v. 6, no. 1/2, p. 44-55.

DESCRIPTORS: Wave transmission, *Radio transmission, Ultrahigh frequency, *Troposphere, Refraction, Diffraction, Partial differential equations, Bessel functions.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY [SELECTED] TRANSLATIONS NO. 26. 17 Apr 63 [90]p. 4 refs. JPRS: 18742.
Order from OTS $2.25 63-21594

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1962, no. 12, table of contents and p. 1-25, 48-52, 54-62.

DESCRIPTORS: Scientific research, *China, *Fluidized solids, *Minerals, Crystal structure, *Conferences, *Pharmacology, Fibers, *Fibers (Synthetic), *Civil engineering, Electronics, Vegetables, Plants (Botany), *Cells (Biology).

Contents:
Solid state processing in fluidization systems, by Ch'en Min-heng and others
Double isomorphie in $CeNbTiO_6$-$YNbTiO_6$ series, by Chang P'ei-shan
1962 Technological Conference of the Pharmacology Society of China, by Shih Kung
Conference on Chemical Fiber Technology, by Chang Chen-ya and Wang Yu-hua
The Representatives Conference and 1962 Annual Meeting of the Civil Engineering Society of China (no. 3) by Huang Shu-ang
An outline of rapidly developed quantum electronics, by Huang Wu-han and Fan Kuo-chien
An in-vivo observation of intercellular protoplasmic movement in the higher plants (excerpt) by Lou Ch'eng-hou and others.

Communication Theory

Pugachev, V. S.
TOWARD A THEORY OF DETECTION AND EVALUATION OF SIGNALS WHICH DEPEND ON A COUNTABLE SET OF PARAMETERS. [1962] 22p. 6 refs.
Order from OTS or SLA $2.60 62-20232

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Energ[etika] i Avto[matika] 1961, no. 5, p. 123-135.

DESCRIPTORS: *Signals, *Detection, *Statistical functions, Theory, Analysis, Probability, Series, Mathematical expectation.

The article presents the theory of joint canonical expansions of two random functions in one and the same system of coordinate functions, and its application to the solution of problems in the detection and evaluation (including selection) of signals which depend on an infinite (countable) set of parameters. This theory gives a general algorithm for optimal processing of input functions of systems designed for signal evaluation on the basis of any Bayes criterion corresponding to a polynomical less function, and also of signal detection systems. (Author)

Shastova, G. A.
INVESTIGATION OF NOISE-STABILITY OF REMOTE CONTROL COMMAND TRANSMISSION BY THE METHODS OF POTENTIAL NOISE-STABILITY THEORY, I. [1961] 19p. 1 ref. MDF S 104.
Order from OTS or SLA $1.60 62-23075

Trans. of Avto[matika] i Tele[mekhanika] (USSR) 1955, v. 16, no. 4, p. 344-355.

DESCRIPTORS: *Communication theory, *Remote control systems, Signals, Noise, Stability, Shielding, Statistical analysis, *Coding.

An appraisal is given of the method of potential noise-stability theory in remote control and of the effectiveness of the noise-stability of various codes. (Author)

Zhitomirskii, V. I.
DETERMINATION OF THE PROBABILITY OF COMMUNICATION INTERFERENCE CAUSED BY INTERFERING SIGNALS [Opredelenie Veroyatnosti Sboev Svyazi, Vyzyvaemykh Meshayushchimi Signalami]. [1961] 11p. 7 refs. MDF Z 103.
Order from OTS or SLA $1.60 62-23177

Trans. of Radiotekhnika (USSR) 1955, v. 10, no. 10, p. 15-22.

DESCRIPTORS: *Radio communication systems, *Radio interference, Probability, Radio signals, Oscillation, *Noise (Radio), Radio transmission.

The action of fading signals from interfering stations on receivers of frequency-manipulated signals is analyzed. The probability of the communication interference is determined, which is caused by fading sinusoidal noise for the single and double reception cases. (Author)

Zverev, V. A. and Orlov, E. F.
ON THE INFORMATION-TRANSMISSION RATE OVER CHANNELS WITH MULTIPATH PROPAGATION. [1961] 14p. 8 refs. MDF Z-137.
Order from OTS or SLA $1.60 62-23034

Trans. of #Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Radiofizika (USSR) 1961, v. 4, no. 2, p. 282-292.

DESCRIPTORS: *Multiplex transmission, *Radio transmission, Underwater communication systems, Signals, Information theory.

A method is given for the computation and measurement of the capacity of communication channels using multipath propagation. It is shown that the fundamental parameter in the determination of the capacity is the relation between the correlation interval of the time changes of the channel transmission coefficient T_{f1} and the frequency correlation interval of the fluctuations ν_o. The channel capacitance remains bounded when $\nu_o T_{f1} \leq 1$ for an unlimited increase in the power. If $\nu_o T_{f1} \geq 1$, then the effect of the fluctuation in the channel parameters can be neglected. The capacitance of a channel with constant parameters, with the exception of the degenerate cases of a distribution of delays, is determined by the total signal energy at the point of reception. (Author)

SOCIAL SCIENCES

Nastase, L. and Mocanu, C.
TRINIDAD TOBAGO (AND) BRITISH GUIANA. 25 Mar 63 [11]p. JPRS: 18354
Order from OTS $0.50 63-21422

Trans. of Natura (Rumania) 1962, v. 14, no. 6, p. 75-80.

DESCRIPTORS: *Trinidad, *British Guiana, *Geography, Population, *Economics, Agriculture, Petroleum.

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10 each. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/6080
Kireyev, Petr Mikhaylovich
RADIATION SICKNESS: CLINIC, DIAGNOSTIC, AND MEDICAL TREATMENT(Luchevaya bolezn' klinika, diagnostika i lecheniye). Moscow, Medgiz, 1960. 49p. (Series: Biblioteka prakticheskogo vracha). Errata slip inserted. 14, 000 copies printed.

BR-SOV/6092
Dzhaparidze, P. N.
PHYSIOCOCHEMICAL NATURE OF THE STABILITY PROPERTIES OF CONDENSED SUBSTANCES AND METHODS FOR THEIR QUANTITATIVE EXPRESSION (Fiziko-khimicheskaya sushchnost' prochnostnykh svoystv kondensirovannykh veshchestv i sposoby ikh kolichestvennogo vyrazheniya) Tbilisi, Izd-vo AN Gruzinskoy SSR, 1961. 245p. Errata slip inserted. 1000 copies printed.

BR-SOV/6106
Belopukhov, A. K., L. I. Vinberg, A. A. Dudin, M. L. Zaslavskiy, and P. P. Moskvin.
DIE CASTING (Lit'ye pod davleniyem). Moscow, Mashgiz, 1962. 399p. (Series: Inzhenernyye monografii po liteynomu proizvostvu) 8000 copies printed.

BR-SOV/6110
Chudnovskiy, Abram Filippovich
THERMOPHYSICAL CHARACTERISTICS OF DISPERSED MATERIALS (Teplofizicheskiye kharakteristiki dispersnykh materialov). Moscow, Fizmatgiz, 1962. 456p. 6000 copies printed.

BR-SOV/6112
Ayzenberg, Grigoriy Zakharovich
SHORT-WAVE ANTENNAS (Korotkovolnovyye antenny) Moscow, Svyaz'izdat, 1962. 814p. Errata slip inserted. 10, 000 copies printed.

BR-SOV/6115
Pinus, N. Z., ed.
ATMOSPHERIC TURBULENCE CAUSING AIRPLANE BUMPS (Atmosfernaya turbulentnost', vyzyvayushchaya boltanku samoletov). Moscow, Gidrometeoizdat, 1962. 166p. Errata slip inserted. 1400 copies printed.

BR-SOV/6136
Azar'yev, Dmitriy Ivanovich
MATHEMATICAL SIMULATION OF ELECTRIC SYSTEMS (Matematicheskoye moldelirovaniye elektricheskikh sistem). Moscow, Gosenergoizdat, 1962. 206p. 7500 copies printed.

BR-SOV/6140
Bolkhovitinov, Viktor Fedorovich
HISTORY OF AIRCRAFT DEVELOPMENT (Puti razvitiya letatel'nykh apparatov). Moscow, Oborongiz, 1962. 129p. Errata slip inserted. 4800 copies printed.

BR-SOV/6144
Chizhevskiy, Aleksandr Leonidovich
IONIZATION OF AIR AS A FACTOR IN THE NATIONAL ECONOMY (Aeroionifikatsiya v narodnom khozyaystve) Moscow, Gosplanizdat, 1960. 757p. Errata slip inserted. 22, 500 copies printed.

BR-SOV/6145
COLLECTION OF INVENTIONS: PLASTICS AND SYNTHETIC RESINS, NO. 1) Sbornik izobreteniy: Plastmassy i sinteticheskiye smoly, vyp. 1-yy) Moscow, Tsentral'noye byuro tekhnicheskoy informatsii, 1961. 103p. (Series: Sborniki otechestvennykh izobreteniy) 3000 copies printed.

BR-SOV/6147
Pisarenko, Georgiy Stepanovich
ENERGY DISSIPATION DURING MECHANICAL VIBRATIONS (Rasseyaniye energii pri mekhanicheskikh kolebaniyakh). Kiyev, Izd-vo AN UkrSSR, 1962. 435p. 2000 copies printed.

BR-SOV/6149
Sergeyev, Aleksandr Aledsandrovich
ESSAYS ON THE HISTORY OF AVIATION MEDICINE (Ocherki po istorii aviatsionnoy meditsiny). Moscow, Izd-vo AN SSSR, 1962. 297p. Errata slip inserted. 1700 copies printed.

BR-SOV/6150
PROBELMS IN HEALTH-RESORT THERAPY. V. 5: STUDIES OF THEPHYSIOLOGICAL EFFECT AND THERAPEUTIC APPLICATION OF AIR IONS (Voprosy kurortologii. [t.] 5: Problemy fiziologicheskogo deystviya i terapevticheskogo primeneniya aeroinov). Riga, Izd-vo AN Latviyskoy SSR, 1959. 424p. (Series: Its: Trudy, t. 20) Errata slip inserted. 1000 copies printed.

BR-CHICOM/6153
Ch'ien Hsüeh-sen
LECTURES ON PHYSICAL MECHANICS (Wu Li Li Hsüeh Chiang I) Peking, K'o Hsüeh Ch'u Pan She, 1962. 397p. 12, 200 copies printed.

BR-CHICOM/6154
Fang Po-yung
THEORY AND MANUFACTURE OF CHEMICAL FIBERS (Hua Hsüeh Hsien Wei Ti Yüan Li Ho Chih Tsao), v. 1) Shanghai, K'o Hsüeh Chi Shu Ch'u Pan She, 1959. 330p. 3500 copies printed.

TRANSLATIONS IN PROCESS

TECHNICAL CYBERNETICS, 1963, NO. 1.
Ak[ademiya] Nauk SSSR. Otdel[eniya] Tekh[nicheskikh] Nauk. Iz[vestiya]: Tekh[nicheskaya] Kibernetika, 1963, no. 1, p. 1-208.

Andreev, P. F. and others.
TRANSFORMATIONS OF PETROLEUM IN NATURE.
Mono. [Prevrashcheniya Nefti v Prirode] Leningrad, 1958, 416p.
To be published commercially.

Andrianov, K. A.
POLYMERS WITH INORGANIC CHAIN MOLECULES.
Mono. [Polymery s Neorganicheskimi Glavnymi Isepyami Molekul] Moscow, 1962, 327p.
To be published by John Wiley & Sons, Inc., 605 Third Ave., New York 16, N. Y. Fall 63.

Beus, A. A.
GEOCHEMISTRY OF BERYLLIUM AND GENETIC TYPES OF BERYLLIUM DEPOSITS.
Mono. [Geokhimiya Berilliya i Geneticheskie Tipy Berillievykh Mestorozhdenii, Moscow] 1960, 330p.
To be published by W. H. Freeman and Co.

Ermakov, N. P.
INVESTIGATION OF MINERAL-FORMING SOLUTIONS WITH SUPPLEMENT.
Mono. pub. 1950, 200p.
To be published by PP.

Frumkin, A. N., Rzhanov, A. V. and Burshtein, R. Kh.
SURFACE PROPERTIES OF SEMICONDUCTORS.
Mono. Poverkhnostnye Svoistva Poluprovodnikov, Moscow, 1962, 230p.
To be published by CB after 4th Quarter, 63.

Glanzmann, E. and Walthard, B.
IDIOPATHIC PROGRESSIVE BROWN LUNG INDURATION IN CHILDREN WITH HEREDITARY HEMOPHTHESIS (Idippatische Progressive Braune Lungeninduration im Kindersalter mit Hereditarer Haemoptyse).
Monatsschrift für Kinderheilkinde (Germany) 1941, v. 88, p. 1-45.

Ivanov, V. V. and others.
THALLIUM: ITS GEOCHEMISTRY AND MINERALOGY, GENETIC TYPES OF DEPOSITS AND GEOCHEMICAL PROVINCES.
Mono. [Tallii; Osnovnye Cherty Geokhimii i Mineralogii, Geneticheskie Tipy Mestorozhdenii i Geokhimicheskie Provintsii, Moscow] 1960, 156p.
To be published commercially.

König, Denes.
THEORY OF FINITE AND INFINITE GRAPHS.
Mono. Theorie der Endlichen und Unendlichen Graphen, Leipzig, 1936.
To be published by Holden-Day, Inc., 728 Montgomery St., San Francisco 11, Calif. 1964.

Koshlyakov, N. S., Gliner, E. B., and Smirnov, M. M.
FUNDAMENTAL DIFFERENTIAL EQUATIONS OF MATHEMATICAL PHYSICS.
Mono. Osnovnye Differential'nye Uravneniya Matemati cheskoi Fiziki, Moscow, 1962.
To be published by Holden-Day, Inc., 728 Montgomery St., San Francisco 11, Calif. 1964.

Krasnikov, V. I., ed.
GEOCHEMICAL PROSPECTING FOR ORE DEPOSITS IN THE U. S. S. R.
Unidentified mono.
To be published by PP Mar 63.

Kuznetsov, S. G. and Golikov, S. N.
SYNTHETIC ATROPINE-LIKE SUBSTANCES.
Mono Sinteticheskie Atropinopodobnye Ueshchestva, Moscow, 1962, p. 3-224.

Lebedev, Ya. S., Chernikov, D. M., and Tikhomirova, N. N.
ATLAS OF THEORETICALLY CALCULATED SPECTRA OF ELECTRON PARAMAGNETIC RESONANCE, PART I.
Mono. Atlas Spektra Elektronogo Paramagnitnogo Rezonansa, Moscow, 1962, 229p.
To be published by CB after 2nd quarter, 63.

Mann, William F.
THE EYES AND VISION OF WHALES (Ojo y Vision de las Ballenas).
Biologica (Chile) 1946, no. 4, p. 23-81.

Mayer , Otto.
PATHOGENETIC ANATOMY AND PATHOGENESIS OF OTOSCLEROSIS, REPORT.
German language mono. Referat über die Pathologische Anatomie und Pathogenese der Otosklerose, n.p., 1932, p. 6-58 (pub. by Congress of Otolaryngology, no. 2).

Sindeeva, N. D.
MINERALOGY AND TYPES OF DEPOSITS OF SELENIUM AND TELLURIUM.
Mono. [Mineralogiya, Tipy Mestorozhdenii i Osnovnye Cherty Geokhimii Selena i Tellura, Moscow] 1959, 255p.
To be published by IP.

Strakhov, N. M., ed.
TYPES OF DOLOMITE ROCK AND THEIR GENESIS.
Unidentified mono. pub. 1956, 378p.
To be published by Ronald Press, New York.

Vershkorskaya and others.
GALLIUM: ITS GEOCHEMISTRY AND MINERALOGY.
Mono. [Galliy; Metody Issledovanii, Rasprostranenie v Gornykh Porodakh i Mineral akh, Tipy Mestorozhdenii, Moscow] 1960, 146p.
To be published commercially.

Vlasov, K. A. and others.
LOVOZERO ALKALIC MASSIF.
Unidentified mono. pub. 1960, 623p.
To be published by OB.

PERIODICALS TRANSLATED COVER-TO-COVER

For basic list of Periodicals Translated Cover-to-Cover see Technical Translations Volume 9 , Number 1.

This basic list is kept up-to-date by giving only changes in the subsequent issues of Technical Translations.

No changes are necessary for this issue.